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# "A B C" EQUIPMENT FOR FACTORY HEATING AND VENTILATING



NO. 27 · SERIES. 5

AMERICAN BLOWER COMPANY

DETROIT, MICHIGAN



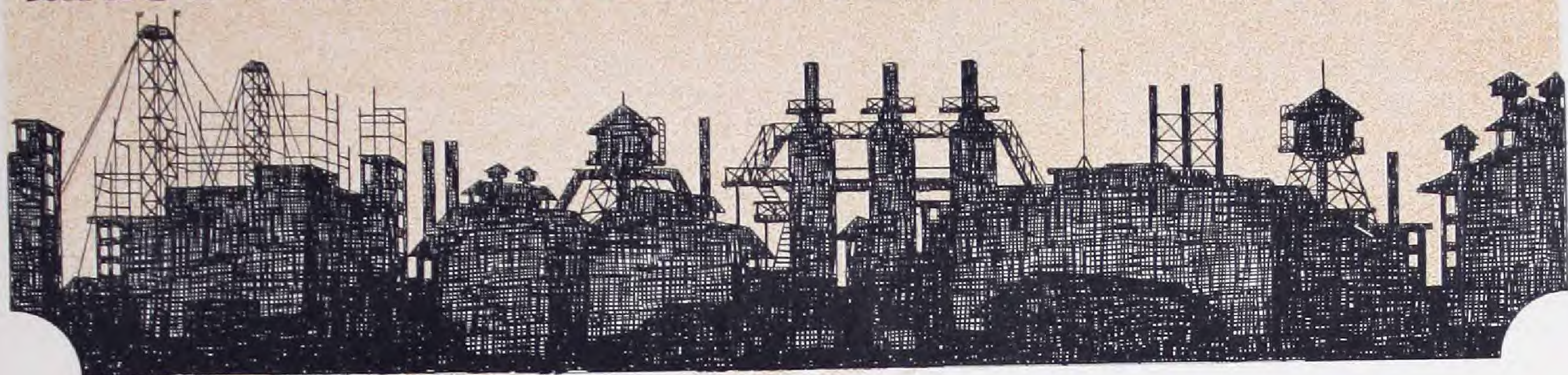
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# "A B C" EQUIPMENT FOR FACTORY HEATING AND VENTILATING



WITH the development of scientific factory methods in such fields as quantity machining, standardizing between precise limits, labor profit-sharing plans, the advisory council and progressive assembly, there has been equal scientific progress made in the handling of the air supply, whereby output is increased, heating expense is reduced, technical processes are carried through under invariable conditions of desired humidity, and in summer a cool interior is obtained at small cost.

One of the direct benefits of modern ventilation is the great reduction in sickness-time of operatives and an increased stability of labor.

These elements have an important and vital bearing on efficient factory operation and the economics of production, and, financially, return enormous dividends indirectly on their capitalized cost of installation.







**Gier Pressed Steel Co., Lansing, Mich.**  
*"Vento" Coils and "Sirocco" Equipment for plant heating.*



**Robert Hassler Co., Indianapolis, Ind.**  
*Plenum ventilating conduit on roof of truss members.*



**Holmes Auto Co., Canton, Ohio.**  
*Electric enameling oven with internal "Sirocco" Fan.*

**"A B C" EQUIPMENT FOR  
FACTORY HEATING AND VENTILATING**

**T**O indicate the relation of a proper ventilating system to production under conditions where it is badly needed, a certain foundry installed for its casting floors a system which removed promptly the usual fumes and gases.

The production curve immediately commenced an upward gradient, with a reduction in the number of defective castings.

This was analyzed and found to be due to the decreased labor turnover.

Where previously the turnover had tended to an average connection of two months for a foundry worker, this increased to ten months.

The workers passed the "breaking-in" stage, acquired both technical skill and facility in pouring and handling the casting flasks, and developed high speed of operation.

### **Ventilation Makes Prosperity**

In a foundry, this ability to attain and maintain production has extraordinary effects upon the patronage, because in modern scientific purchasing methods for factories, the greatest stress is placed upon prompt and unvarying deliveries of semi-raw material such as castings.

The same thing holds true for many other typical plants which furnish partially manufactured products to large corporations, and in greater or less degree ventilation and its allied processes of air treatments have similar effects on the earnings and capacity of the plant.

### **Equipment for Old or New Structures**

The American Blower Company prepares standardized equipment of various capacities for ventilating, air-washing, humidifying, cooling and heating evenly all portions of the modern factory engaged in technical or ordinary intensive production.

Installations may be applied to old structures, or may be incorporated in new construction, and American Blower Company engineers have available an enormous amount of practical experience and data on factory



air treatment, which is at the service of those who have problems in ventilation or are in charge of new construction.

## Ventilation

**T**HERE are a multiplicity of degrees of factory ventilation, ranging from the ordinary requirements of changing the air supply of the light manufacturing plant handling cleanly and odorless material, in charge of a few operatives of light machines, to the other extreme, where the material generates immense quantities of smoke and dust, or gives off harmful and corrosive gases and fumes.

Between these extremes, there are many variations and gradations of ventilating requirements, more or less imperative in their demands for correct solution, and often specified on the various statutes of the several States.

### Plenum or Exhaust Ventilation

Speaking generally, there are two types of mechanical factory ventilation. In one, air is drawn out of the room or loft in which manufacturing is carried on, and in the other air is forced into the workshop through suitable ducts. These are known respectively as exhaust and plenum systems.

The exhaust system is the less dependable, as air enters the room at all points and cannot be controlled. This causes many eddies to form and often pockets the air in some section of the chamber, so no ventilation is produced.

With a change in the direction or intensity of the wind, there are changes produced which materially alter the interior ventilation of the factory, such as it is.

The plenum system does not possess these disadvantages of sensitiveness to changes in the weather, but has its own tendency to allow air to lodge unchanged in parts of the shop.

*"Sirocco"*  
TRADE MARK



**B. J. Johnson Soap Co., Milwaukee, Wis.**  
*Ventilating gratings in columns for "A B C" System.*



**Baker-Vawter Co., Benton Harbor, Mich.**  
*Showing ceiling ventilating duct for "A B C" Equipment.*



**Dayton Metal Products Co., Dayton, Ohio.**  
*Ventilating ducts for "A B C" Equipment.*

**"A B C" EQUIPMENT FOR  
FACTORY HEATING AND VENTILATING**





**Ford Motor Company, Detroit, Mich.**  
*Section of the plant showing ducts of the "Sirocco"  
Ventilating System.*



**Industrial Works Co., Bay City, Mich.**  
*Ventilating Conduit System at roof trusses.*



**John Deere & Co., Moline, Ill.**  
*"A B C" Factory Piping System in plant.*

**"A B C" EQUIPMENT FOR  
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## Plenum-Exhaust Systems

A combination of these two systems, correctly balanced and designed, has given much satisfaction.

Ducts from a "Sirocco" Fan, which will be later described, lead air under pressure into various parts of the chamber nearly at floor level. These plenum lines are usually carried along the ceiling, and descend at pillars or the other structural verticals of the building itself.

There is also a similar system of withdrawal ducts of approximately equal capacity, which gather air at or near the ceiling, and by a series of branches ending in a trunk conduit lead to the exhaust side of a "Sirocco" Fan.

The warmed air, naturally, rises and in this manner convection is used to assist the flow of air through the work-room.

It might be mentioned that there is a limiting distance and size of duct to be maintained between the two sets of air passages, as, if the volumes be too great at any openings and they be too near together, the air stream will short circuit and neglect the desired function of changing all the air within the room at a steady rate, hour by hour.

## Special Installation

In this ventilation scheme, which is basic, let there be introduced, as an example, a special condition which affects ventilation.

For instance, the shop may be devoted to some grinding operation, and will possess in long rows several batteries of grinders, which constantly shed metallic and abrasive dust.

A case of this kind alters the capacity of the plenum system of ducts, and diminishes the exhaust conduit system.

The wheels are surrounded by suitable hoods, which are the mouths of a special exhaust conduit, the function of which is to carry away from the batteries all the ground-off debris from the wheels.

This material may be light and easily transported, such as sawdust or wood dust from a sanding machine.



A very advisable disposition is to direct the flow to the boiler grates, where it may be made available as fuel, under careful provisions to prevent explosive combustion and flare-backs.

This "Sirocco" Fan is, in effect, a member of the exhaust portion of the ventilating system of the workshop, and plays its part in the normal ventilation of the chamber, so far as change of air is concerned. At the same time it performs also a special service peculiar to a manufacturing problem.

### Structural Problems

The workshop is often housed in its own special structures, and the form of these buildings affects the general problem of ventilation, as the ceiling disappears and is replaced by a high peaked roof with skylight, placed above a central main bay of great length, with lower side bays at left and right, and sometimes gallery floors in the low bays.

Here the general principles of the plenum and exhaust systems are preserved as before, except that instead of a single set of "Sirocco" Fans there may be two, four or more systems of plenum and exhaust sets operated by as many batteries of "Sirocco" units.

Each system is complete in itself and cares for a section of the length of the structure without being in any way connected with the other sets, except that the capacities are usually equal and the units are identical and interchangeable.

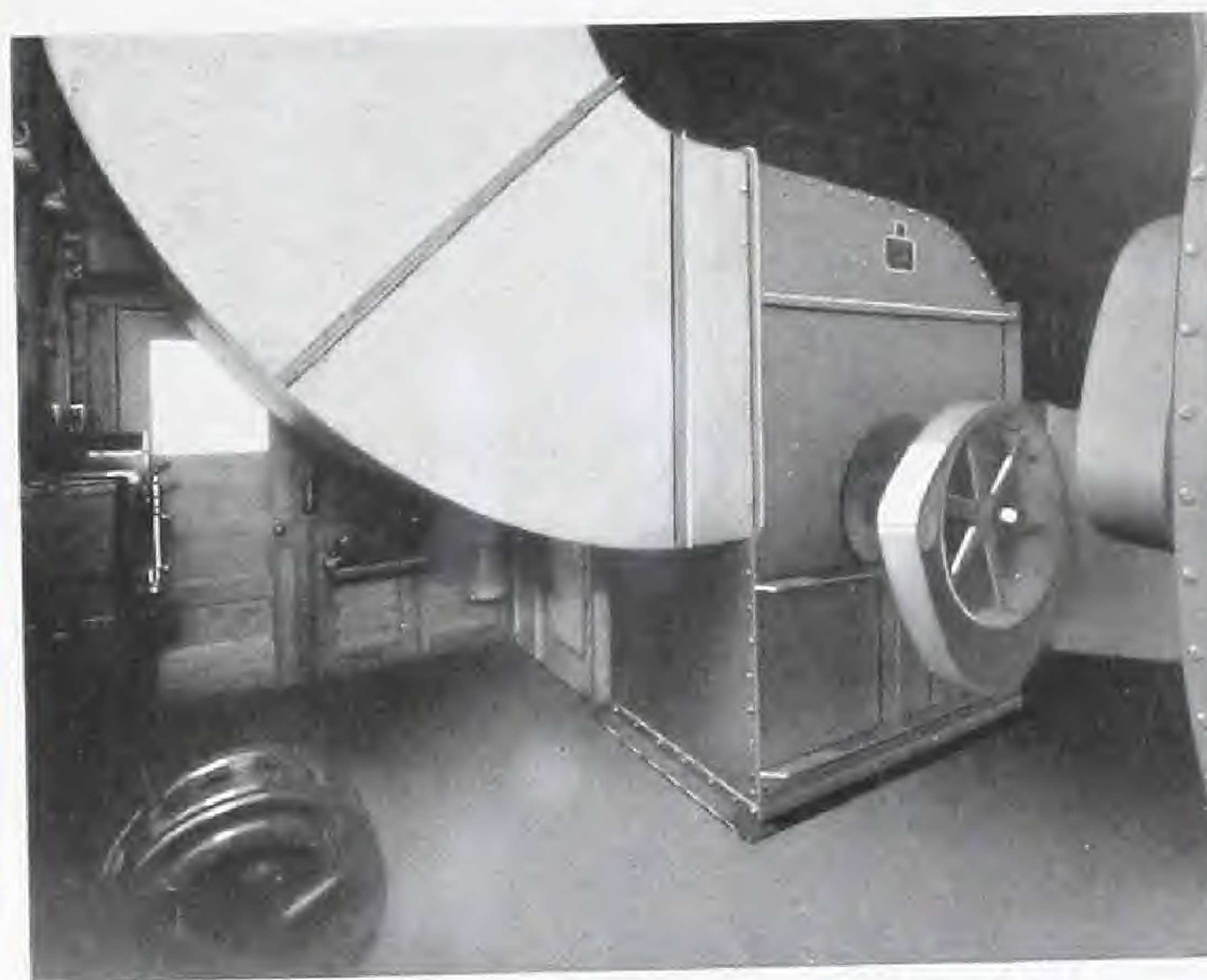
The large and high central bay is often used as an air reservoir, permitting the vitiated air to flow upwards from the side bays and galleries before being drawn into vacuum conduits.

**AMERICAN BLOWER COMPANY**  
DETROIT, MICHIGAN

**"Sirocco"**  
TRADE MARK



**Crown Cork & Seal Co., Baltimore, Md.**  
*Distributing ducts in columns on machine shop floor.*



**Firestone Tire & Rubber Co., Akron, Ohio.**  
*"Sirocco" Fan Installation.*

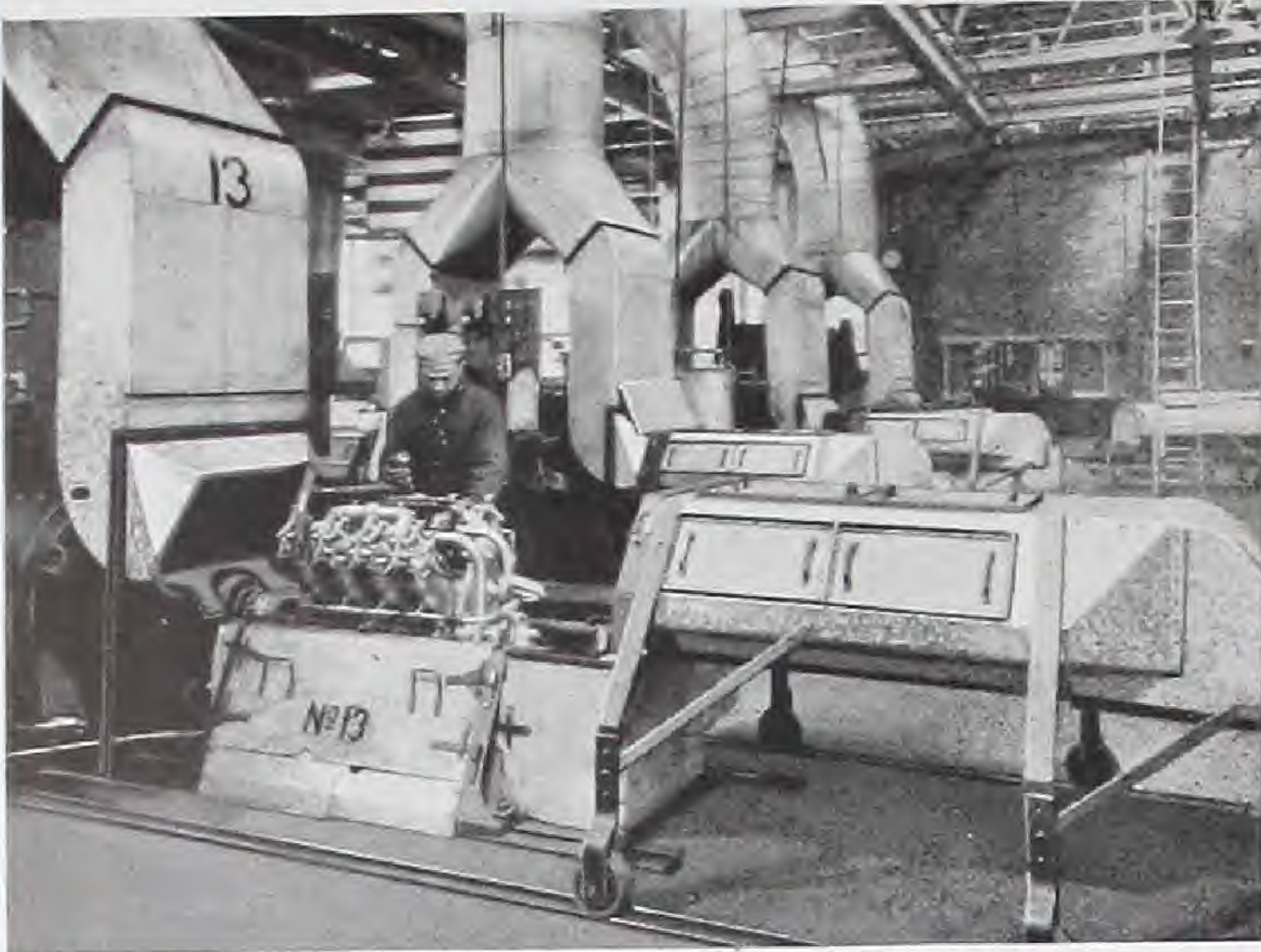


**Detroit Steel Products Co., Detroit, Mich.**  
*"Sirocco" Fan and Equipment in special penthouse for ventilating plant (in construction).*

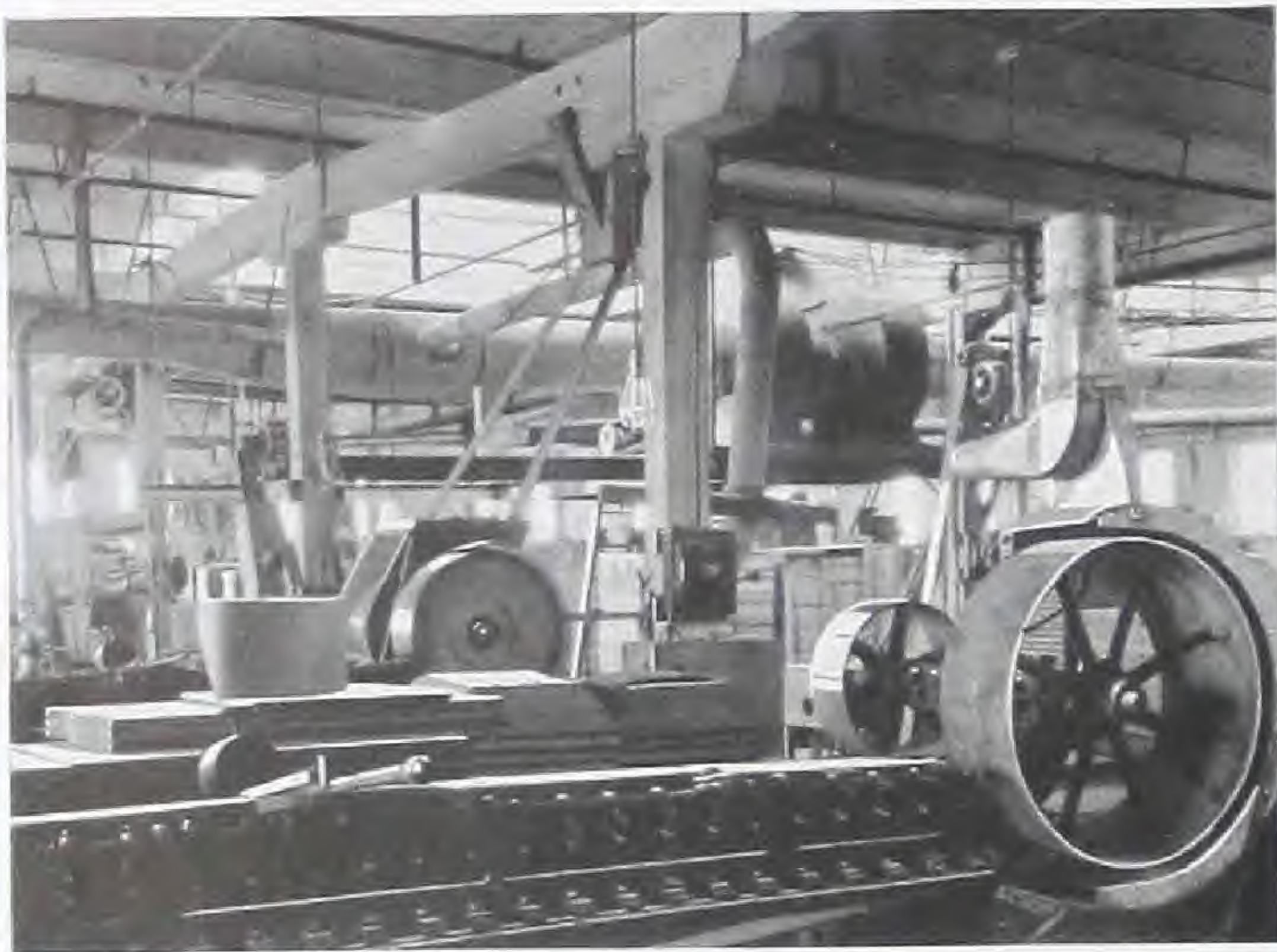
**"A B C" EQUIPMENT FOR  
FACTORY HEATING AND VENTILATING**



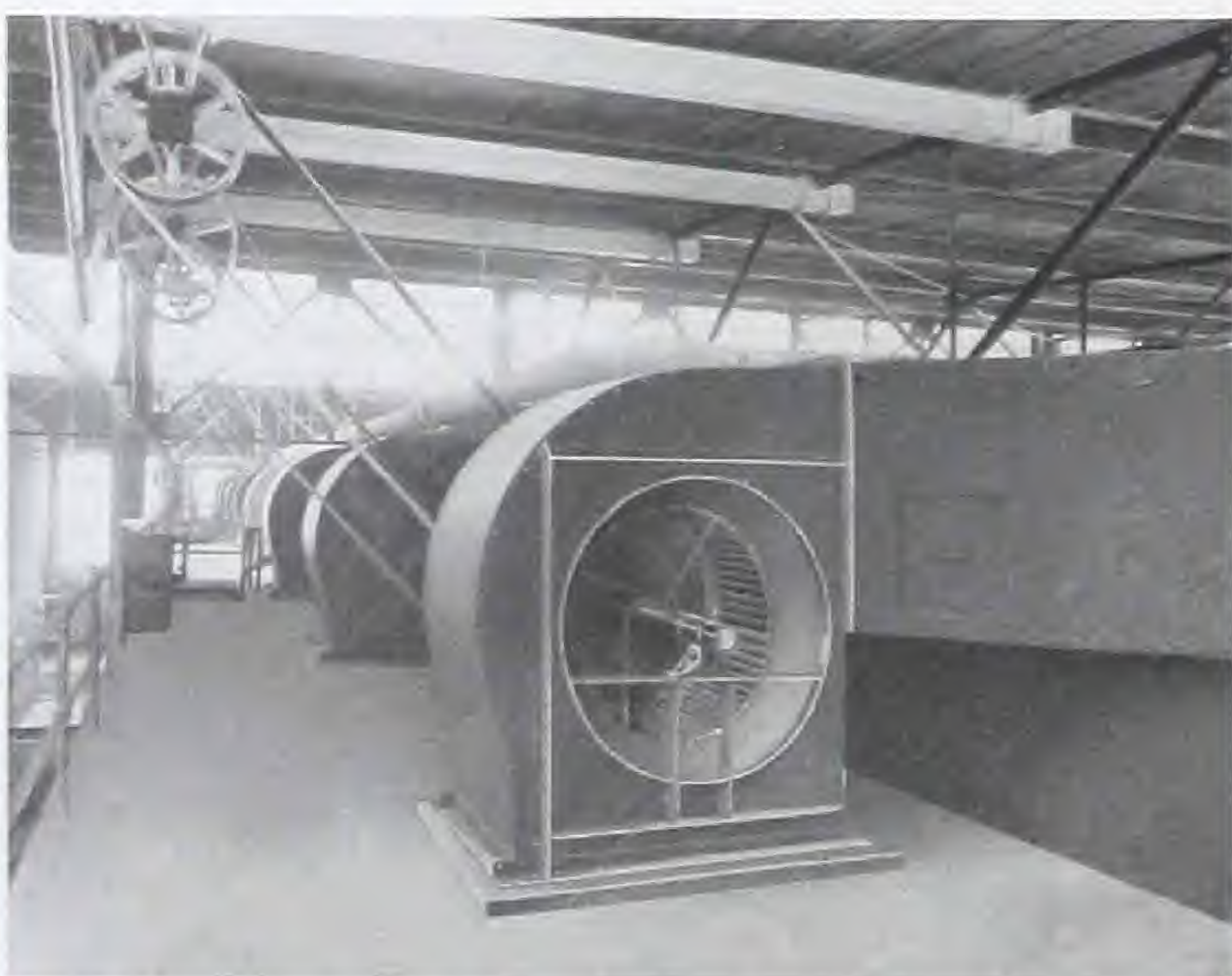
**"Sirocco"**  
TRADE MARK



The Willys-Overland Co., Toledo, Ohio.  
*"A B C" Exhaust System in the motor testing department.*



Sonora Plant, Saginaw, Mich.  
*Woodworking, Exhaust System, "Sirocco" drive.*



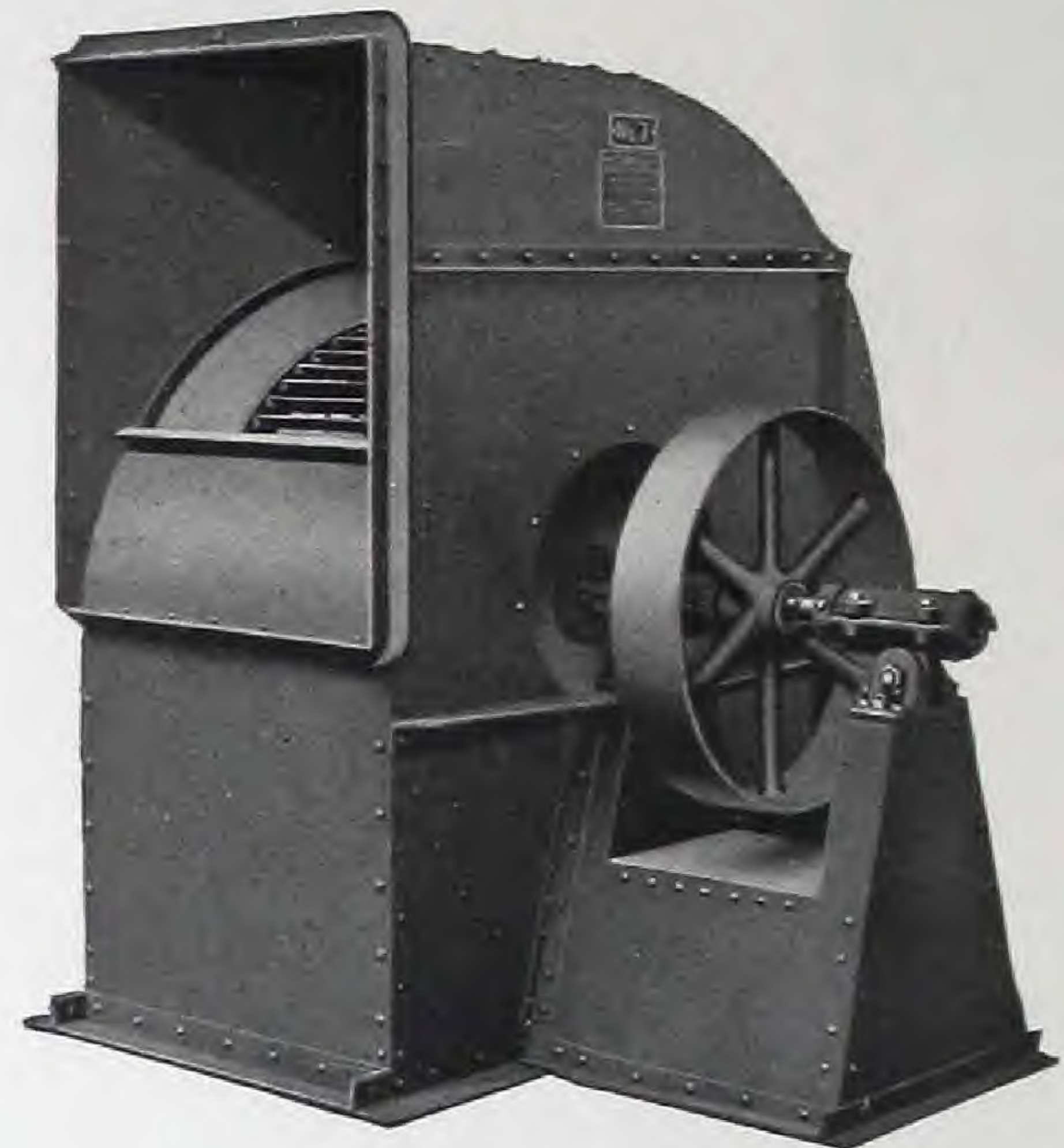
H. W. Johns-Manville Co., Manville, N. J.  
*Battery of "Sirocco" Fans for dryers. Factory has complete "A B C" Equipment.*

**"A B C" EQUIPMENT FOR  
FACTORY HEATING AND VENTILATING**

## "A B C" Fans and Blowers

THE prime movers of the air supplies of the large or small factory are the "A B C" Fans and Blowers.

### American "Sirocco" Fan



The drive of the American "Sirocco" Fan is usually by means of a pulley for belt drive, or a special American Blower Company steam engine, with internal self-oiling features, which avoid any necessity for attention.

Also "Sirocco" Fans may be had with direct-connected motor.

### Types "E" and "C" Steel-Plate Exhaust Fans





## Type "P" Steel-Plate Pressure Blower and Exhauster



## "Ventura" Disc Ventilating Fan



## Humidifying and Air Washing

THE ventilation of a factory is not in itself a complete listing of the services performed by the "Sirocco" Fan and the American Blower Company Equipment furnished with the fan.

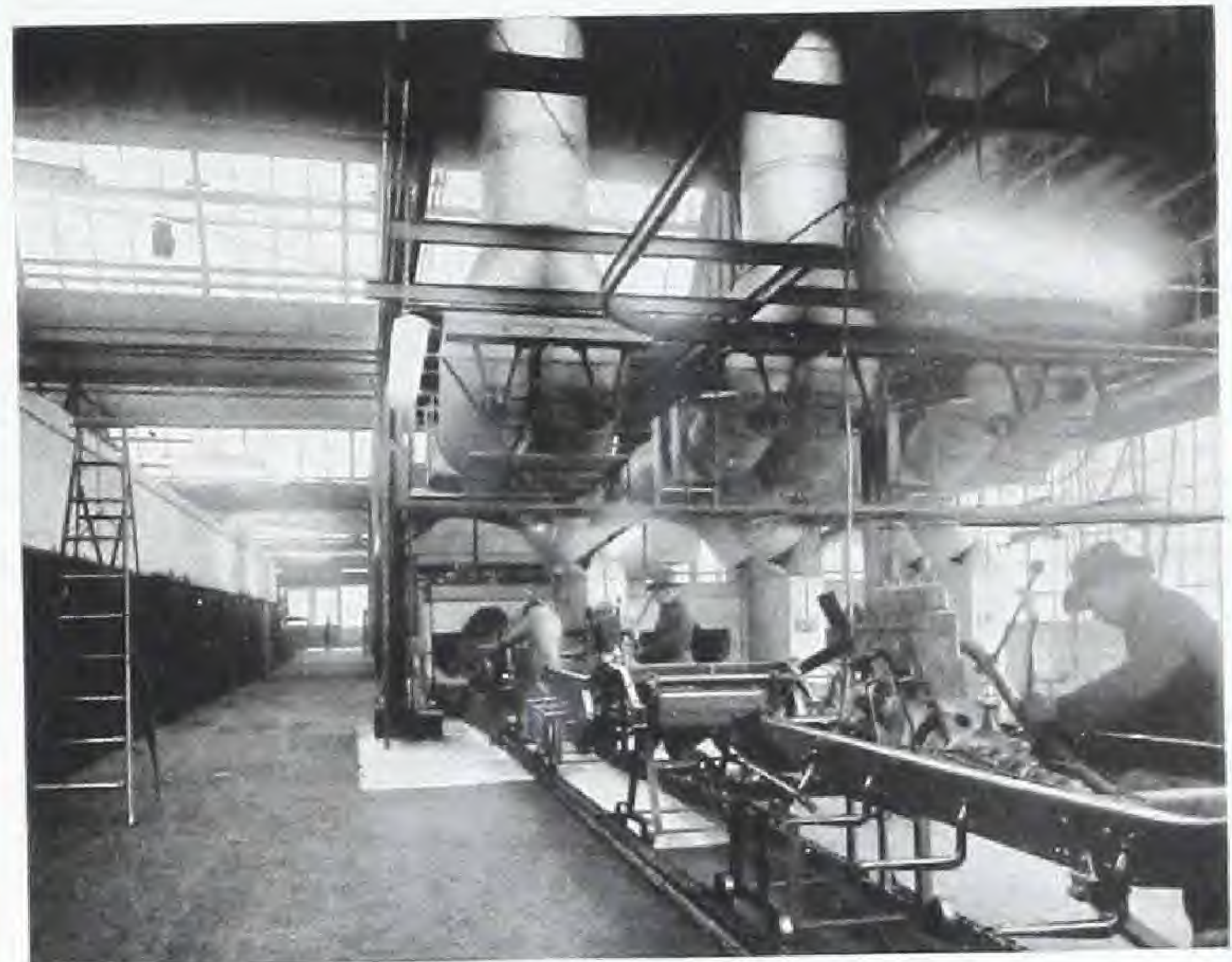
In many factories, the air has to be treated. For instance, it might be supposed that a plant would possess a large painting loft for finishing and enameling large and bulky pro-

**"Sirocco"**  
TRADE MARK



The Dayton Engineering Laboratories Company, Dayton, Ohio.

*The buffing department is equipped with "A B C" Exhaust System.*



Essex Motor Car Co., Detroit, Mich.

*Paint fume underground exhaust conduit in chassis finishing department.*



Prest-O-Lite Co., Indianapolis, Ind.

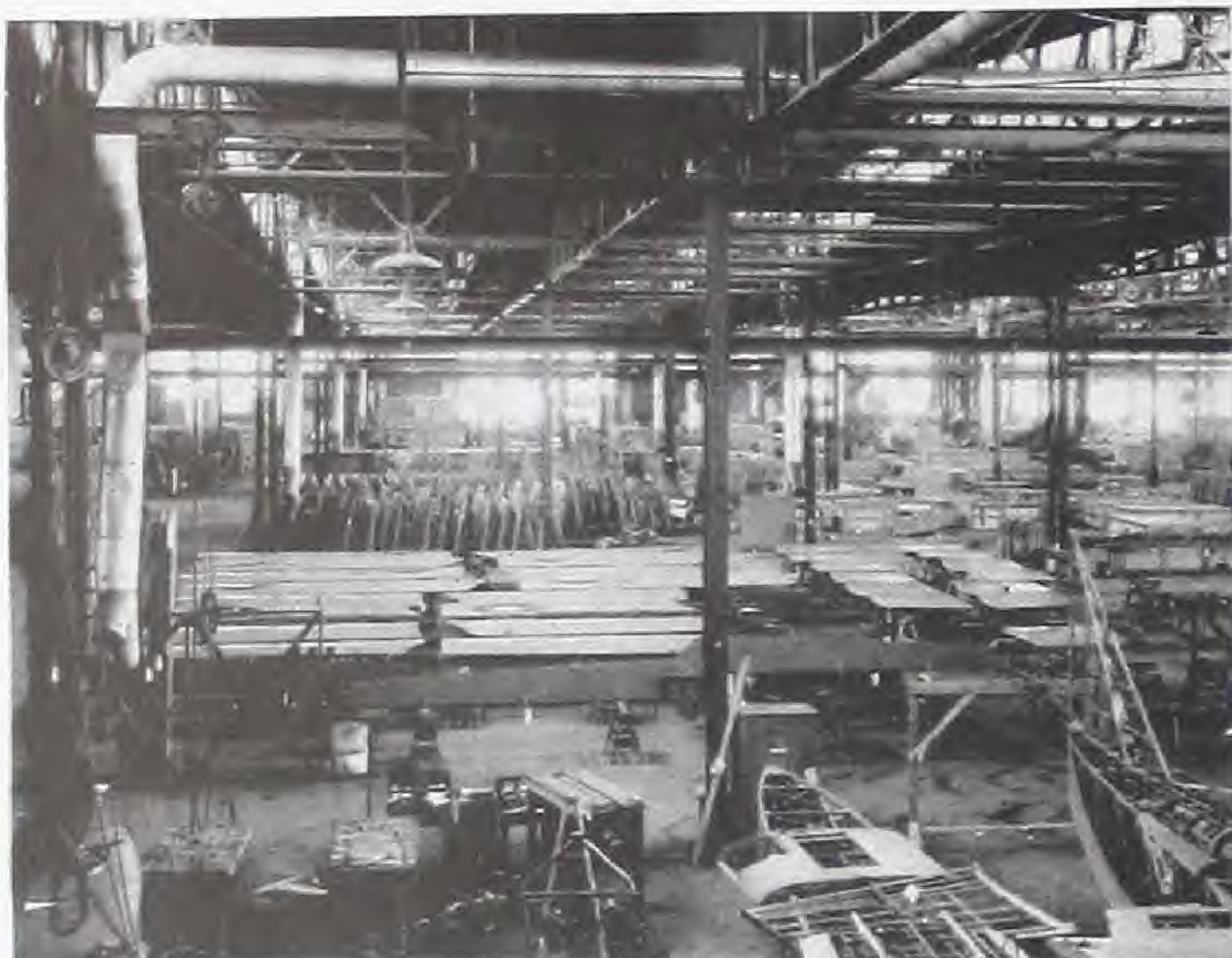
*Battery plant air supply registers with underground conduits.*

**"A B C" EQUIPMENT FOR  
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**The Curtiss Aeroplane & Motor Manufacturing Corporation, Buffalo, N. Y.**  
*Well-lighted and ventilated construction floor.*



**The Curtiss Aeroplane & Motor Manufacturing Corporation, Buffalo, N. Y.**  
*Another part of the construction floor in the North End Building.*



**Dusenbergs Motors Co., Elizabeth, N. J.**  
*Final assembly floor of plant with complete "A B C" Equipment.*

**"A B C" EQUIPMENT FOR  
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ducts, such as parts for the automotive industry, furniture, farm implements, etc.

These products are often handled scientifically by using "dip" baths, and allowing surplus paint, or paint and varnish combined, to drain off into the tank, to take a special instance of quantity production in a particular field.

But paint, while it may be readily "dipped" or sprayed on an object, instead of being applied by the slow brushwork method, does not dry any faster when dipped than if it were brushed on.

Obviously, an immense drying loft must be used to store the parts which have gone through the tank very rapidly. Necessarily, this large loft will demand a large overhead for capitalized cost and rental allowance.

On some days, rainy and cold, the loft will be very inefficient as a drying department, and will only reach its best capacity on a few days in the year.

Yet the department must be made of a size which will be large enough for its most ineffective performance, and, therefore, have a very large expense involved for space which is not always useful.

### **The Scientific Painting Loft**

Such a loft may be equipped with a "Sirocco" System for complete ventilation; a full and rapid supplying of air to carry away evaporated liquids from the paint, and to bring to the linseed oil the necessary oxygen to form the flexible film, which is paint.

This will decrease at once the size of the loft and largely decrease the overhead.

Under this new condition, no dust is carried into the wet paint to stick on the surface, and no change takes place within the closed loft, so far as the air is concerned, whether it is winter or summer, dry or drizzly, cold and frosty, or the hot sun is baking a thirsty summer land from a cloudless sky.

The loft is now a very small place, and painted parts are passed through it nearly as quickly as through the dipping tanks.



American Blower Company Equipment not only has increased the drying speed but improved the quality of the work, and thrown open for productive use a quantity of factory space formerly occupied unnecessarily.

Technical considerations of this kind prevail in nearly all the basic industries.

Here a spinning plant needs heavily humidified air to properly spin cotton and linen fibres.

A tobacco factory requires certain departments humid and warm, to maintain toughness and flexibility in the frail tobacco leaves being handled.

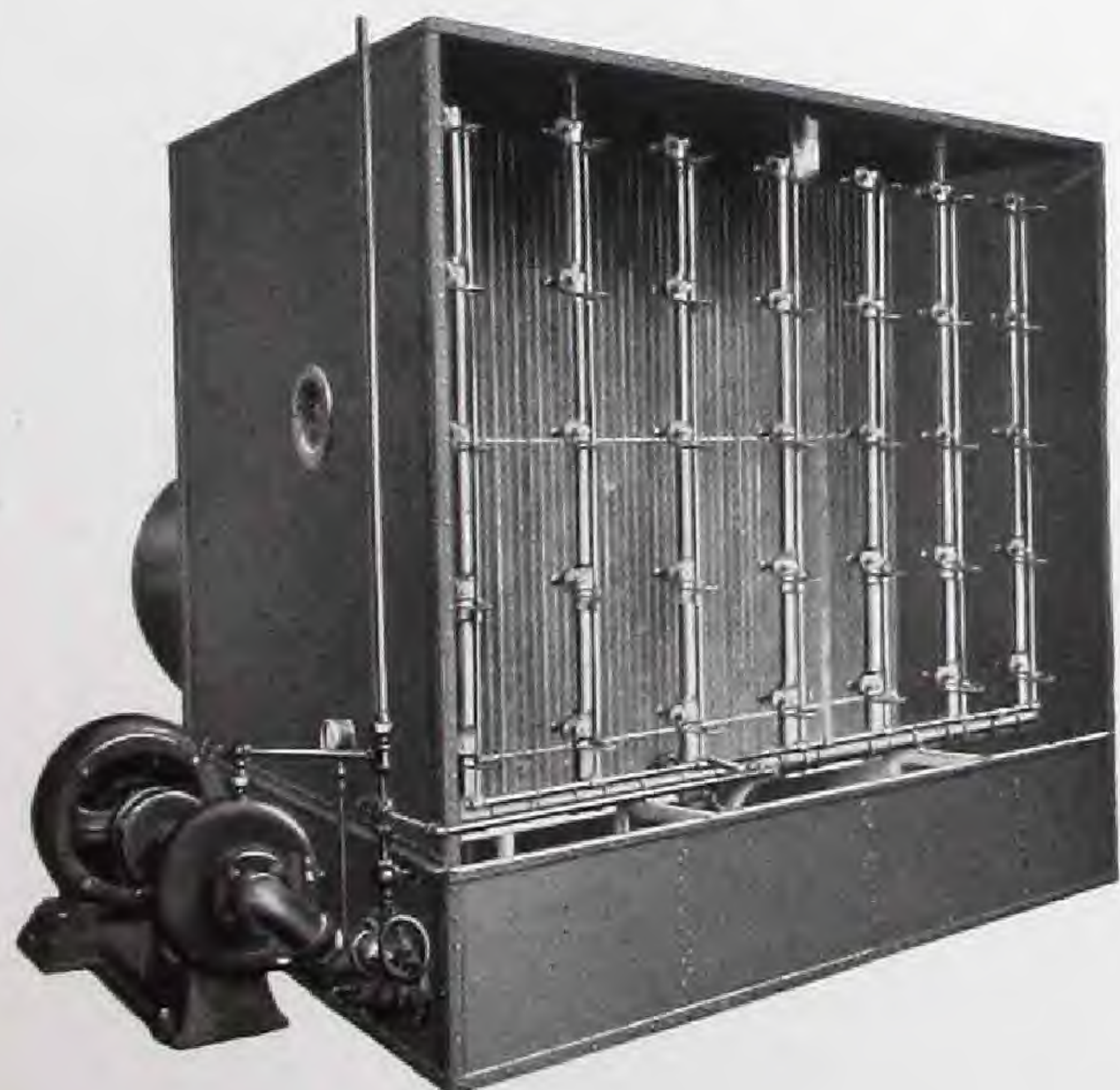
A varnish room requires hot and dry air to maintain the brilliancy of expensive varnish applied to costly woodwork.

An aeroplane factory requires dry, fast-moving air at a certain unvarying temperature in the doping room to evaporate cellulose nitrate dope on wing fabrics without "blushing," which indicates the development of free acid, and to carry away the poisonous fumes of amyl acetate and acetone from the workers.

These conditions and many more are met by factory installations of "A B C" Air Washers and Humidifiers, in connection with the proper "Sirocco" System.

### **"Sirocco" Air-Conditioning Apparatus**

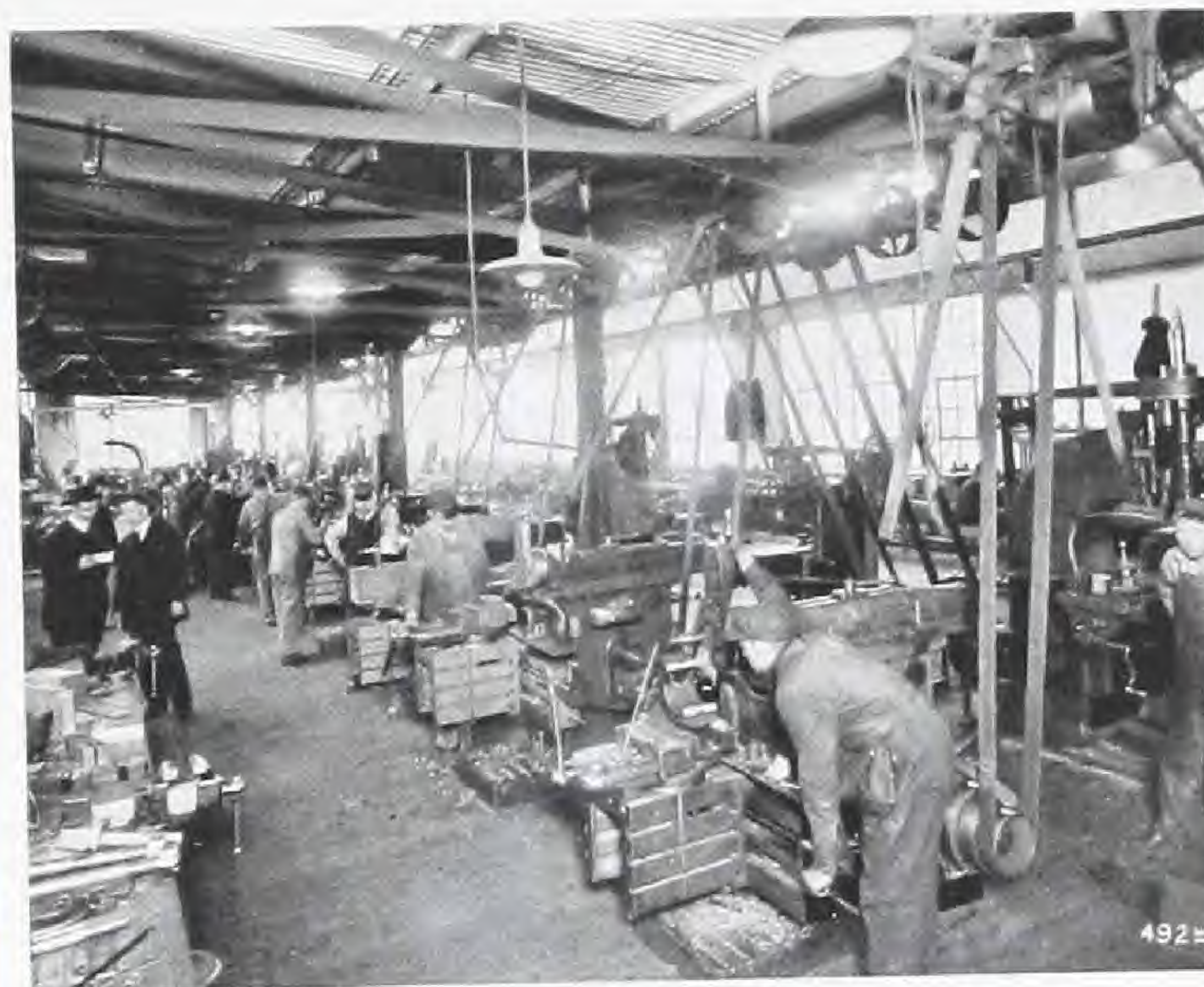
Washing, Purifying, Cooling and Humidifying the Air



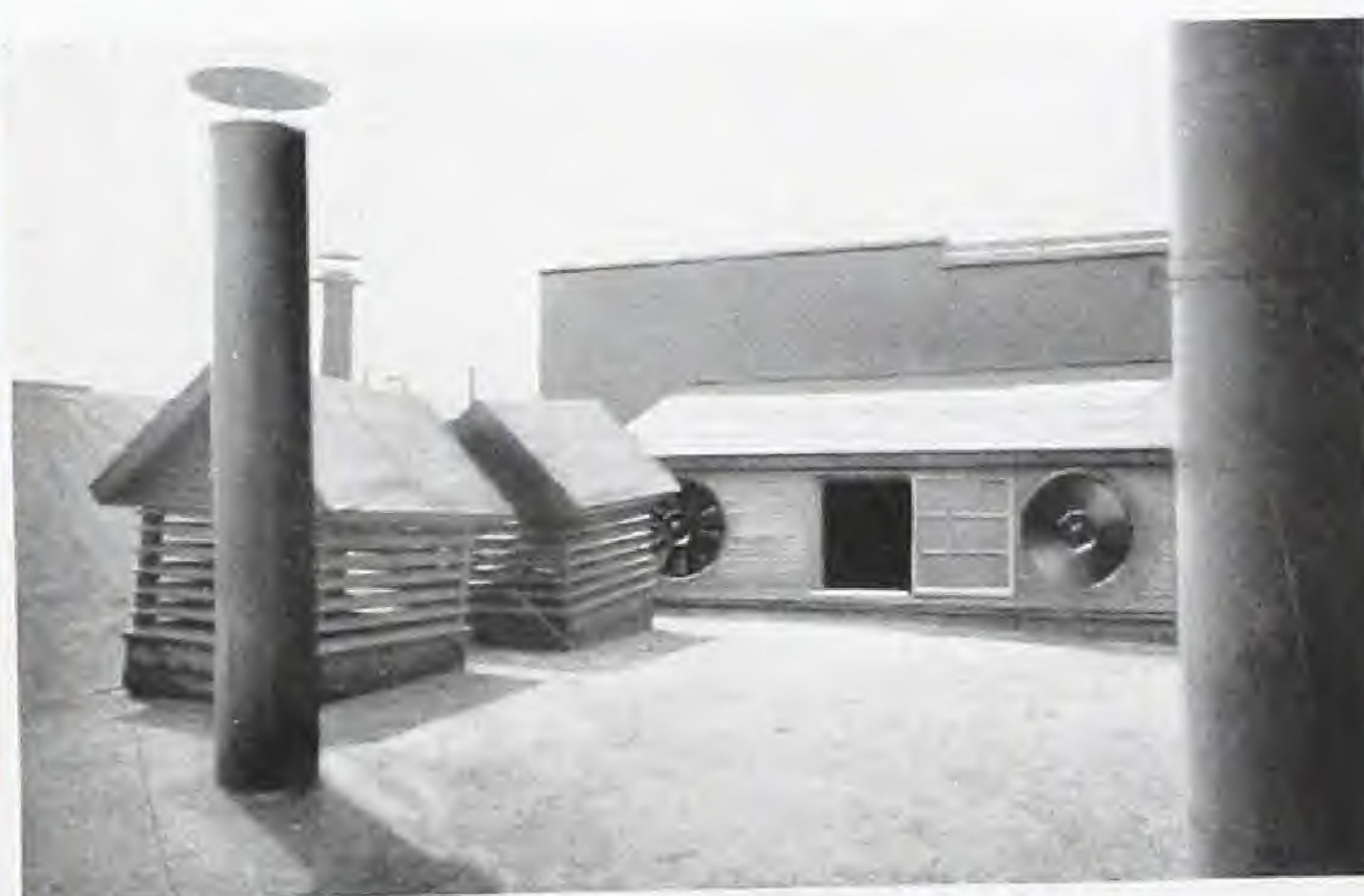
**"Sirocco"**  
TRADE MARK



**Everitt Bros. Mfg. Co., Detroit, Mich.**  
*Enameling ovens with "Ventura" Fans, base type, and "A B C" Pipe Coil Heater.*



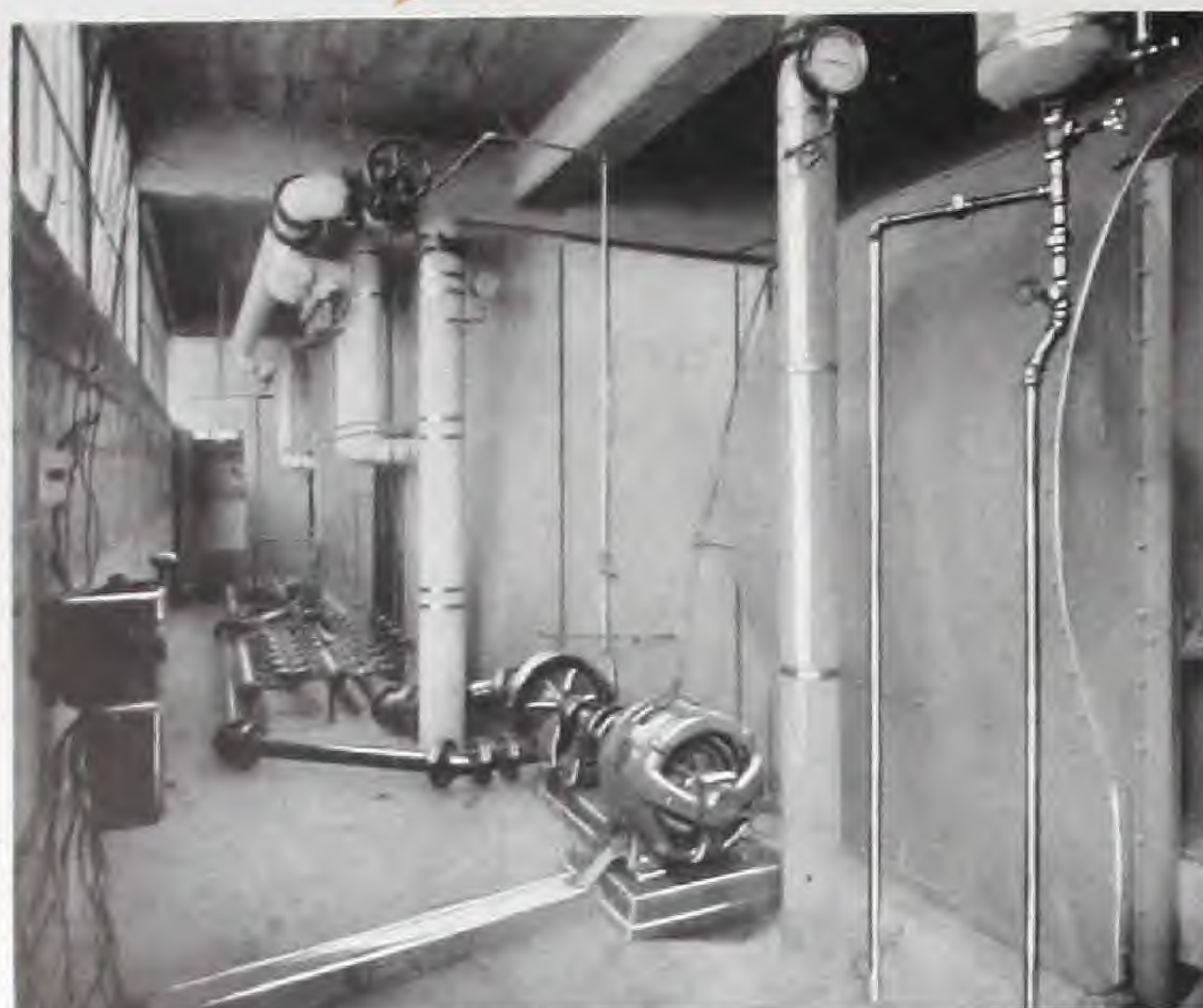
**Timken-Detroit Axle Co., Detroit, Mich.**  
*Typical shop in "A B C"-equipped plant.*



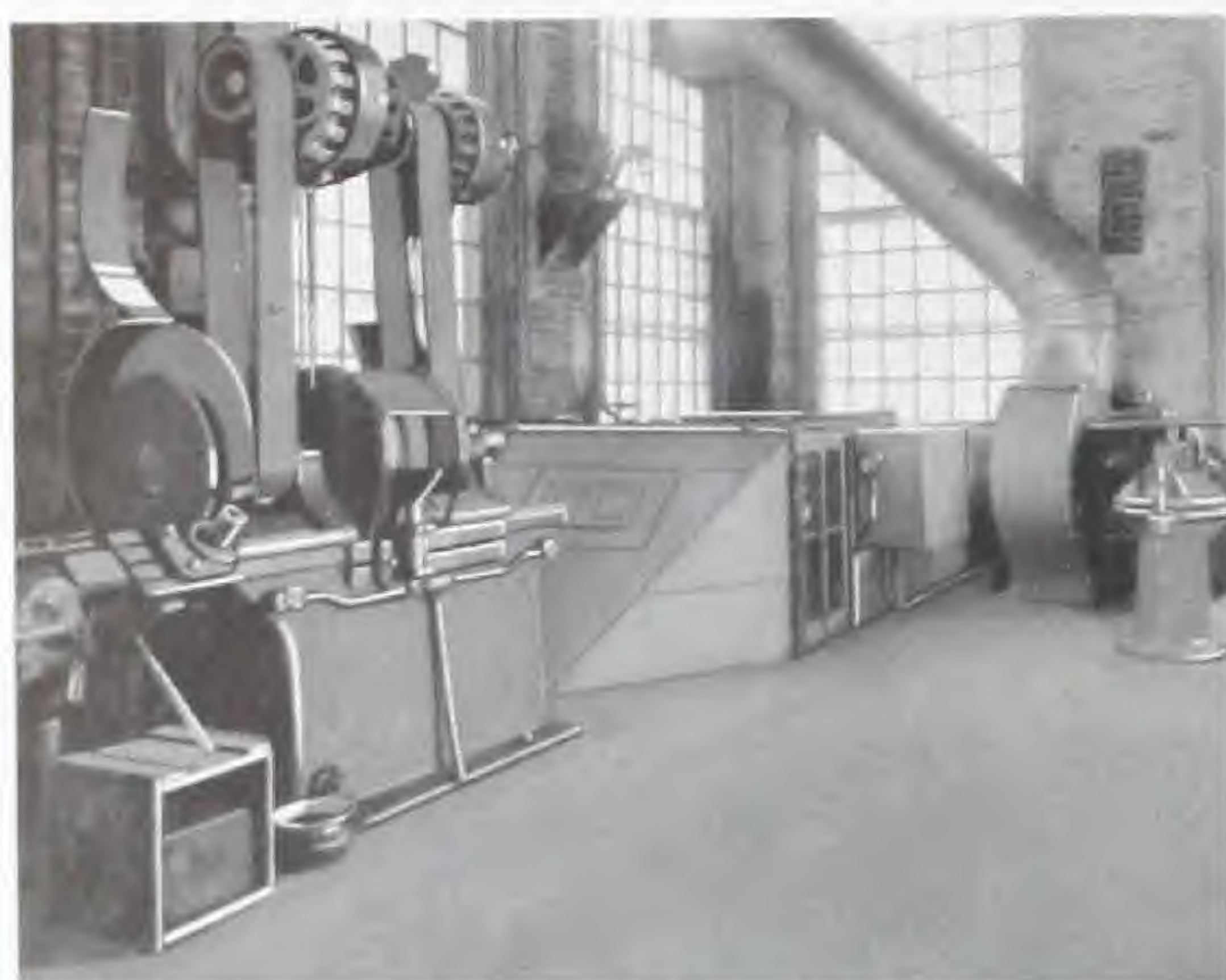
**Kelsey Wheel Co., Detroit, Mich.**  
*Fume exhaust by "Ventura" Fans from pickling vats.*

**"A B C" EQUIPMENT FOR  
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Prest-O-Lite Co., Indianapolis, Ind.  
*"Sirocco" Fan, with "A B C" Air Washer and Heater Equipment.*



S. F. Bowser & Co., Fort Wayne, Ind.  
*"Sirocco" Fan and "A B C" Air-Washer.*



Central of Georgia R. R. Locomotive Shop,  
Macon, Ga.  
*"Sirocco" Heating and Ventilating.*

**"A B C" EQUIPMENT FOR  
FACTORY HEATING AND VENTILATING**

According to circumstances, the washer may be so modified that the air supply will be given greater or less humidity, as any desired standard is wanted for the various factory processes for which humidity or dryness is required.

The ventilating plant and air washer need not necessarily be housed within the structure, but often forms a superstructure on the factory roof.

In the case of such installations, it has often been found convenient to lead the conduits along the roof surface to the points where the tempered air is carried vertically downward through the hollow supporting columns of the structure, or the special shafts used for distribution.

Many examples of this practice in conserving working space within the factory edifice may be shown, both in roof installations and in installations high on the walls of the interior of the building.

## Heating and Cooling

**T**HE personal comfort of the operatives in a factory has an important bearing on the efficiency and output of the various departments.

"Sirocco" Air-Washing apparatus has been shown to be an efficient cooler of the air passed through it.

It might be allowable to refer again to the efficiency of the cooling effect and how it is brought about.

The air is caused to be reduced markedly in temperature.

Although this air may be passed for some distance through a roof conduit of metal exposed to the hot sun of summer, all it experiences is a rise in temperature, but not the corresponding increase in humidity which goes with that rise.

Therefore, it is delivered to the workshop in a condition of "low" humidity.

As a result, the evaporation of perspiration from the workers is greatly increased in the



treated air, causing at the same time the grateful sensation of cold caused by the extraction of the "heat by evaporation."

The worker feels a comforting coolness precisely similar to the exhilaration of the open air after a summer shower, and for exactly the same reason, despite the actual temperature of the air measured by a dry-bulb thermometer.

### Effects of Air Motion

By causing currents of air to be produced within the factory by electric fans, the cooling effect of the treated air is increased, and highly satisfactory cooling of a factory interior is brought about during the summer time.

The same thing is measurably true where the treated air of low humidity is warmed by forge fires, ovens, or other radiated heat incidental to factory processes.

The workers experience the refreshing effects of increased evaporation that counterbalance the direct heating effect of the fires.

### Heating by Humidity

The heating of a factory in winter by means of the ventilating air is a different phase of the same problem.

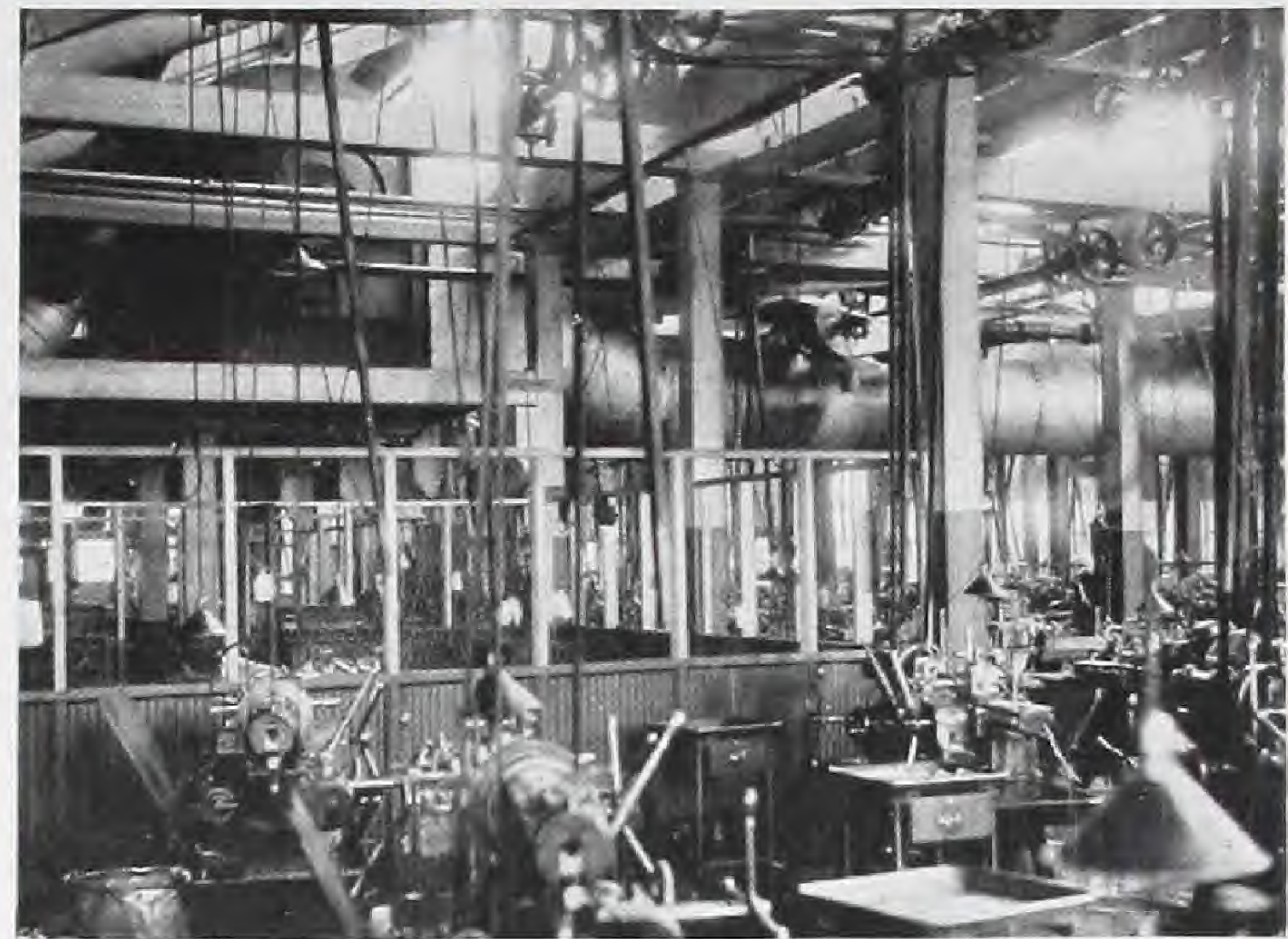
In the northern portion of the United States outside air at low temperature is dry, and exceedingly so if the temperature is raised, a condition very wasteful of coal if the air is to be heated.

In place of bringing free air continuously into the factory, it is a comparatively easy matter to produce a closed circuit for the ventilating air, whereby it passes through the building, and is continuously rewashed in the "A B C" Washer as it makes each circuit.

It will be remembered that pure, dry air, being a gas, instantly takes up and instantly parts with heat, and is itself useless as a vehicle for transporting warmth.

The real vehicle is the water-vapor content, which is slow to take up heat and equally reluctant to part with it.

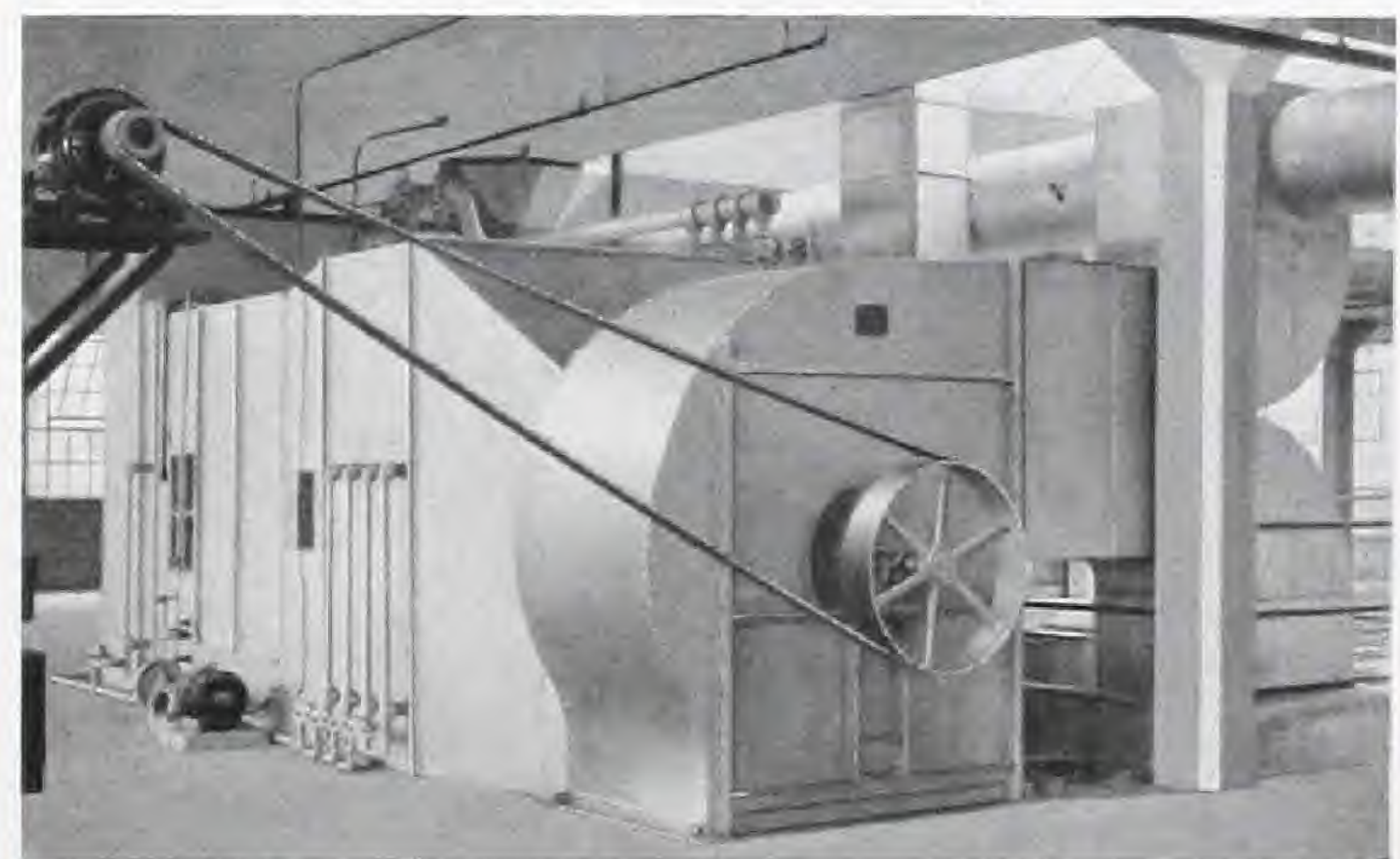
*"Sirocco"*  
TRADE MARK



Dayton Metal Products Co., Dayton, Ohio.  
*"Sirocco" Unit and Conduit at roof level.*



Dominion Bridge Co., Winnipeg, Man.  
*"A B C" Distributing Pipes for Air-Heating System.*

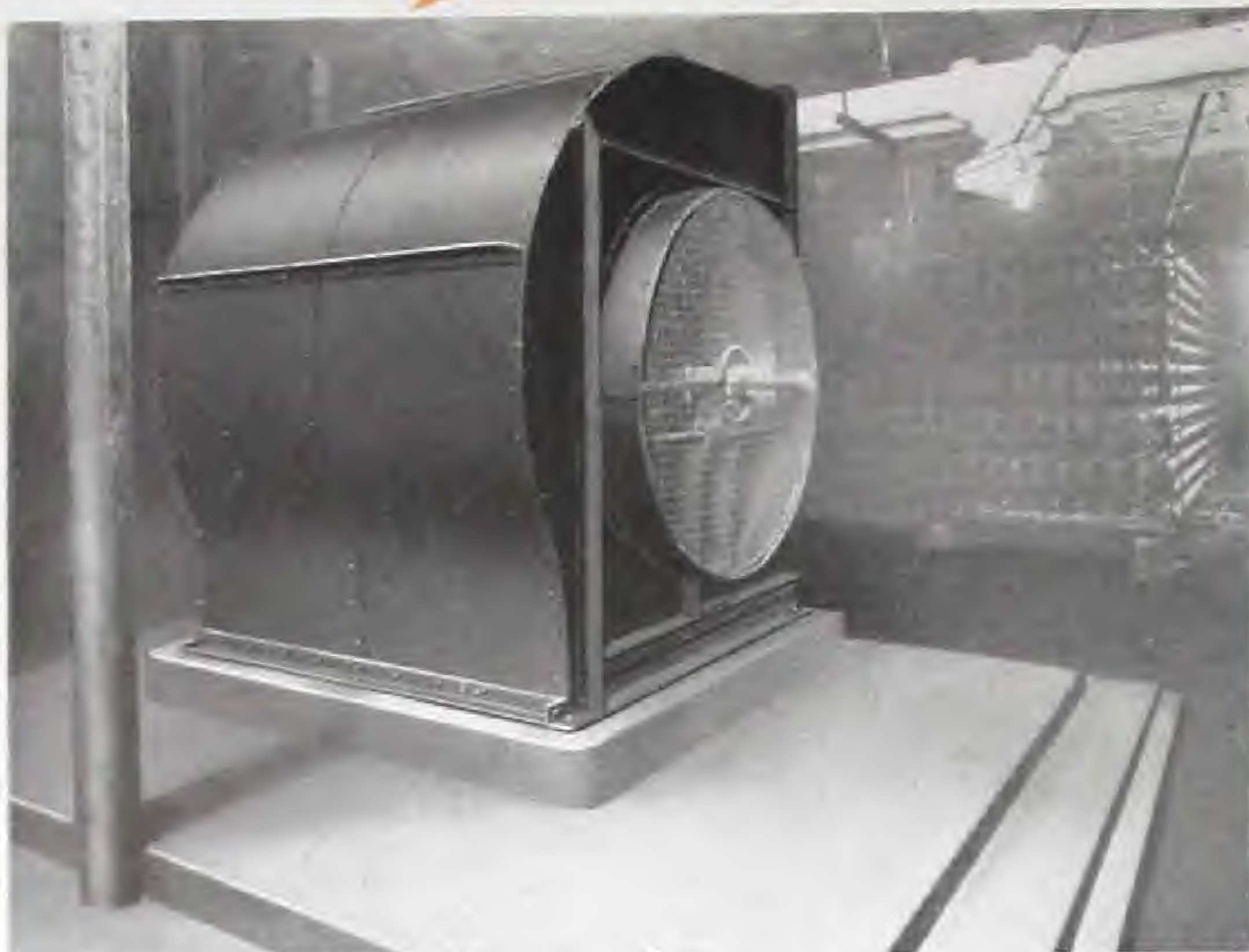


American La France Fire Engine Co., Elmira, New York.  
*"Sirocco" Fan and Air-Conditioning Apparatus.*

**"A B C" EQUIPMENT FOR  
FACTORY HEATING AND VENTILATING**



**"Sirocco"**  
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Union Terminal Cold Storage Co., Jersey City,  
New Jersey.

*"Sirocco" Double Unit Installation.*



Eastern Car Co., E. Glasgow, N. S., Can.  
*"Sirocco" Fan and "A B C" Heater Installation.*



*This view shows handling of air ducts in a  
modern factory building.*

**"A B C" EQUIPMENT FOR  
FACTORY HEATING AND VENTILATING**

### Economy of Coal Supply

Therefore, it is possible to so close the air circuit that the air and its water vapor, once warmed, is passed again and again through the humidifier unit, taking its water content steadily around, being heated in a unit, and thence conveyed to all parts of the structure which it warms, before it again passes to the "Sirocco" Fans which operate the exhaust and plenum lines.

This air in time becomes well humidified, but never to such a degree that it is a cause of discomfort to the worker. The warmth conveyed by the water vapor is distributed in all parts of the interior, even to distant corners.

This system operates so effectively that it is able to maintain a difference of eighty degrees between exterior and interior air, and at the same time furnish air of perfect purity, breathable, free from fumes and gases, and absolutely without dust or disease germs.

The heating cost of a closed-circuit "A B C" System is about one-half of a system in which new air is constantly being introduced.

The heating is integral with the ventilating.

### The Pipe Coil Heater

**T**HIS coil consists of an assembly of standardized units, to make a heating element proportionate to the quantity of water vapor to be heated per minute in a factory air system.

It is sometimes placed in advance of the air washer, especially if the air supply is passed through a closed circuit. It may be placed in the ventilating line after the air washer, or in two sections, before and after.

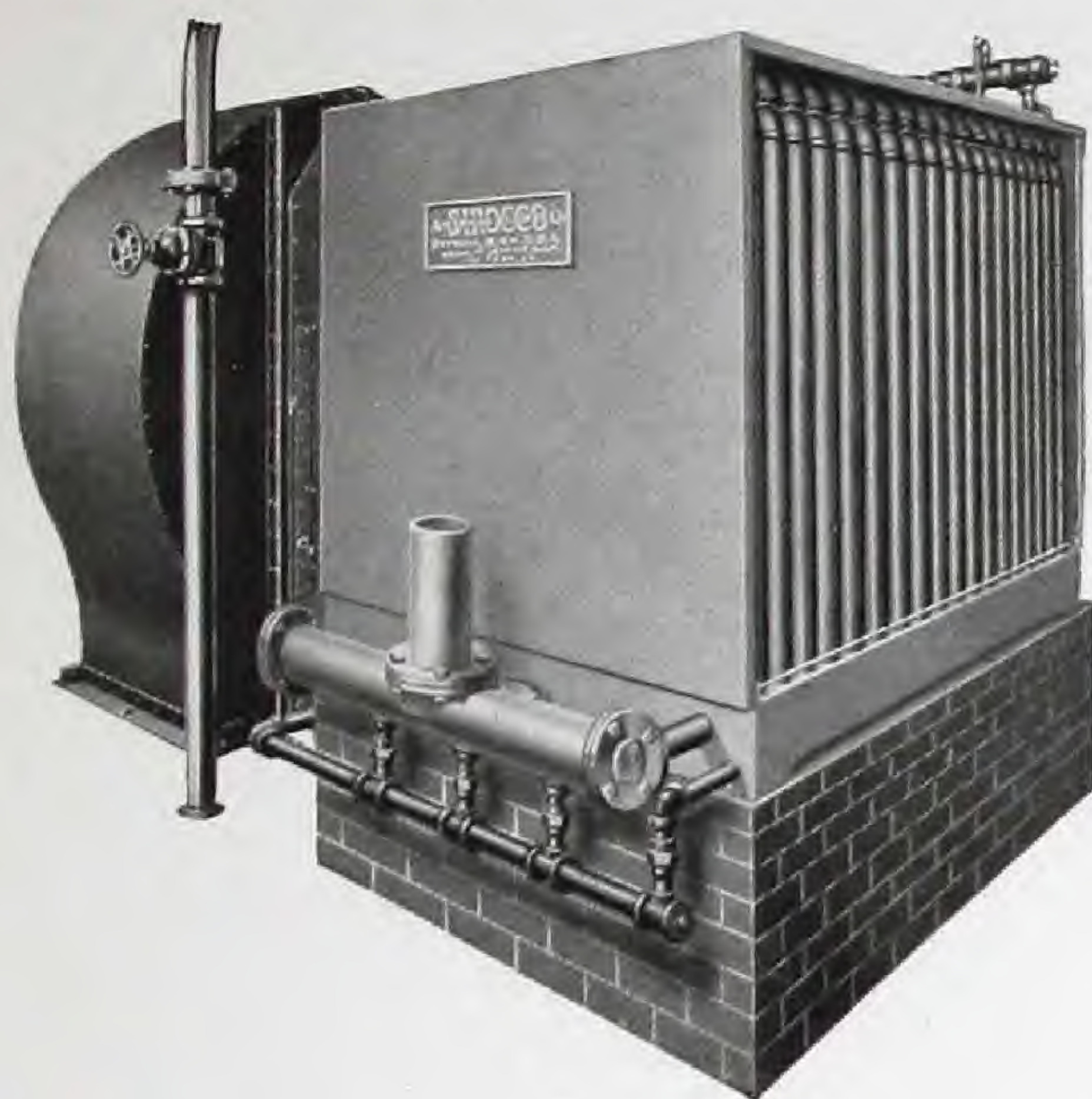
### Sources of Heat

In some cases a heater is supplied with live steam, and in others with engine exhaust, while yet other installations have both live and exhaust-steam groups of coils in the one assembly of a large heater.

The greatest economy and flexibility may be produced by operating only a part of the heater. The moment steam supply is cut off,



## "A B C" Pipe Coil Heaters



the condensation drains automatically out of the idle bases.

It is, of course, desirable that the installation be so made that the bases shall be absolutely level or slightly tilted forward to assure complete drainage of contained water.

### Radiating Surface

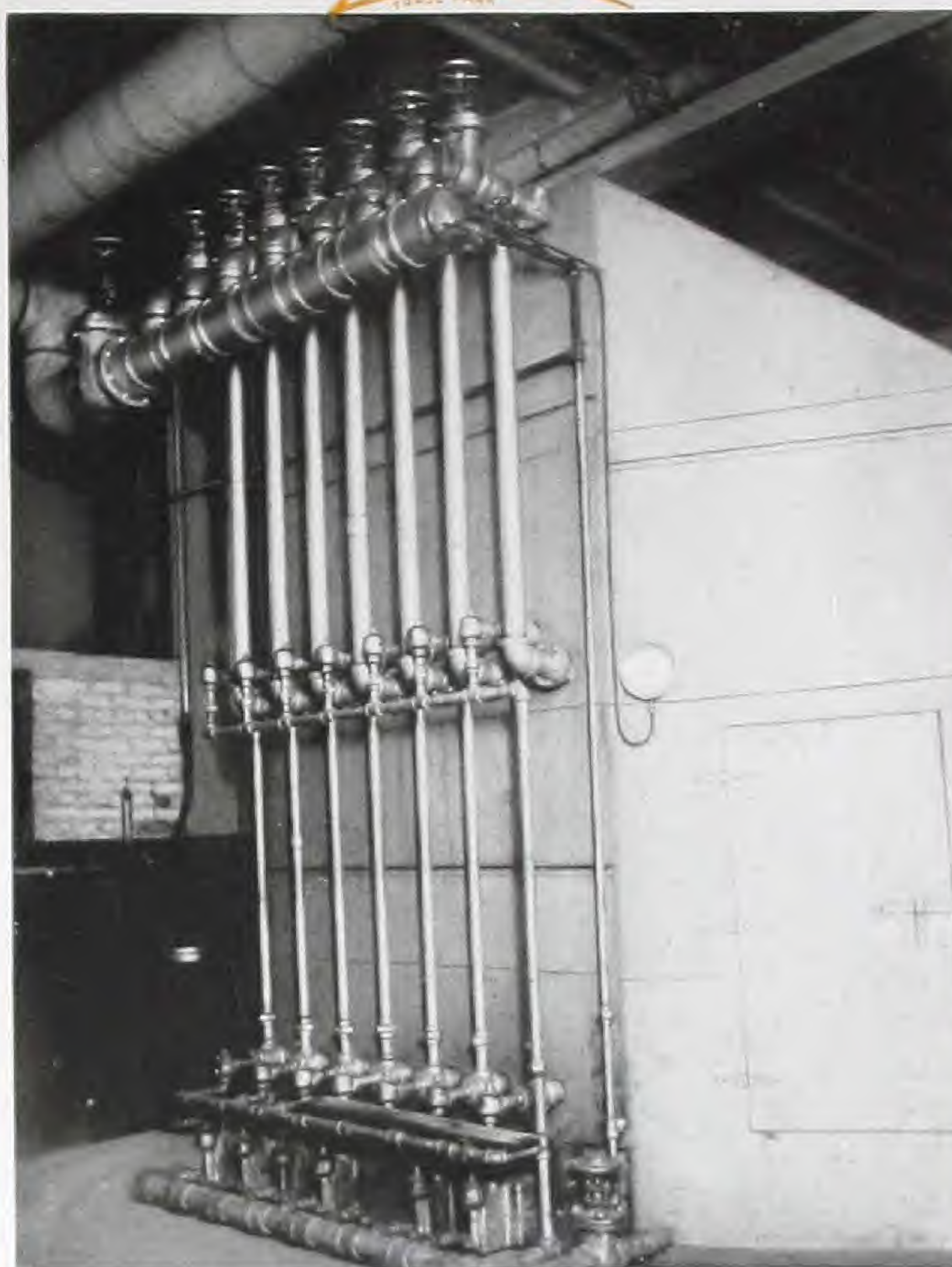
The surface of the cast unit is characterized by high sharp knobs made integral with the casting, staggered in five rows on each side, and presenting diagonal surfaces to the air stream which is thoroughly intermixed in passing through the space between two adjacent units.

These stacks are assembled in any desired depth and length, and are in standardized heights of 30, 40, 50 and 60 inches. They are united in tiers on two levels, and may be assembled to any depth.

### The Vento Heater

The "Vento" consists of hollow cast-iron sections taking live steam at the upper end and discharging through similar openings at the base.

The units are joined by hexagon nipples with right and left thread, which firmly join the "Vento" castings into stacks.



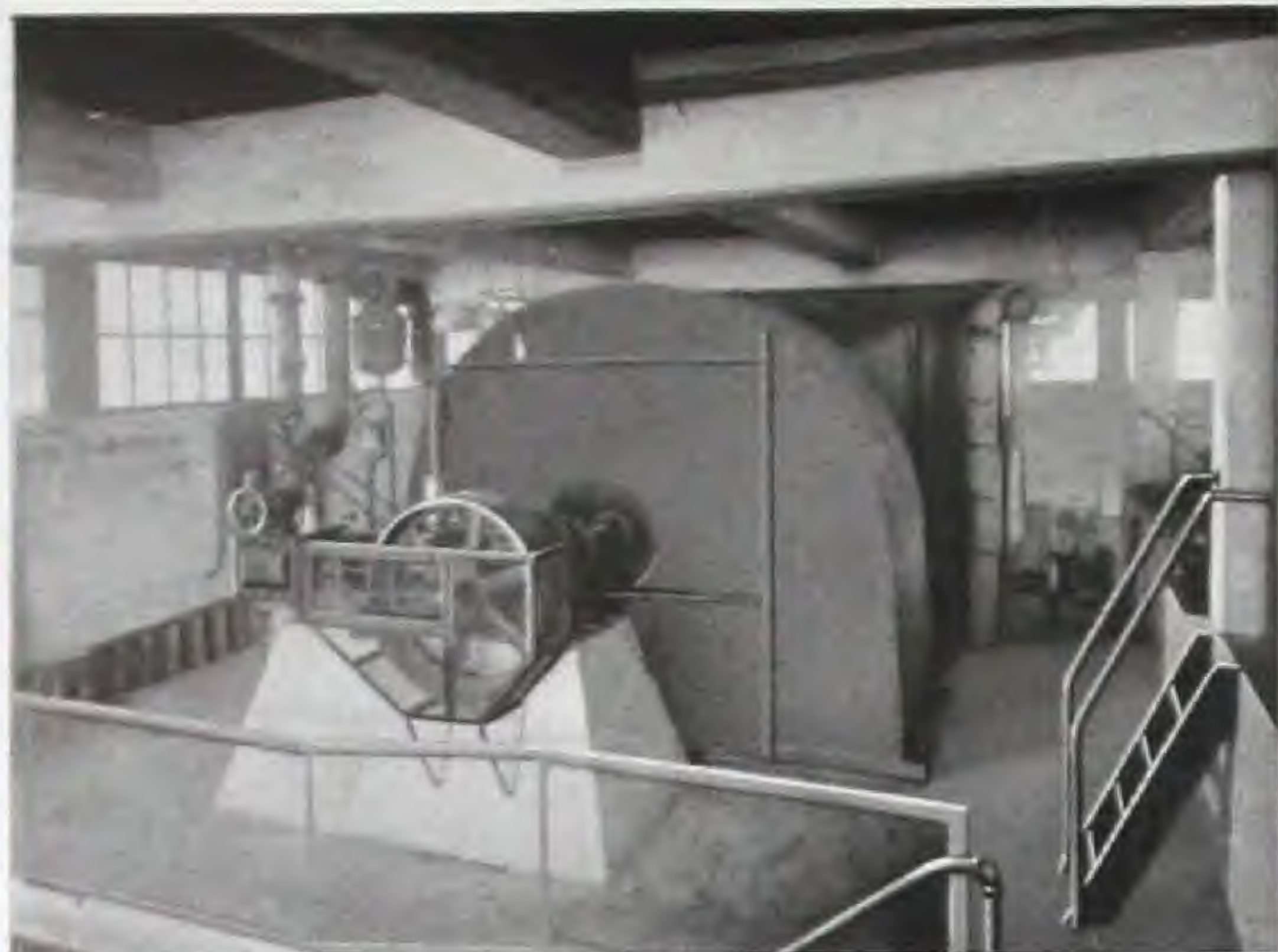
Mishawaka Woolen Mills, Mishawaka, Ind.  
*"A B C" Coils and Air Washer for textile plant.*



Gier Pressed Steel Co., Lansing, Mich.  
*"A B C" Heater and belt-driven "Sirocco" Fan.*

"A B C" EQUIPMENT FOR  
FACTORY HEATING AND VENTILATING





Prest-O-Lite Co., Indianapolis, Ind.  
*"A B C" Heating and Ventilating Equipment.*



Avalon Knitwear Co., Utica, N. Y.  
*"A B C" Heaters and "Sirocco" Fan with ducts.*



Turner Bros., Terre Haute, Ind.  
*Cool air ducts for men and molds in the glass plant.*

**"A B C" EQUIPMENT FOR  
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## Unit Heating

IT is often desirable for various reasons that a factory be equipped with an air-heating plant of an inexpensive yet efficient character.

The structure may be leased, or a new building may be under contemplation, or the plant may have great enlargements proposed.

The special device applicable to this condition is known as the Unit Heater. This equipment is a self-contained assembly of moderate capacity, and according to the needs and size of the structure to be warmed, these units are located at intervals within the interior, usually in pairs at right and left side walls, or, in the case of large and wide structures, with units along the center and smaller units at the sides in the various bays formed in most structures of such dimensions.

These unit heating installations are efficient, yet it must be remembered that they are to a certain extent makeshifts installed to produce immediate results which will sufficiently serve the purpose.

The real and proper equipment of a factory consists of the systems of conduits, air washers, heaters and distributing ducts, with "Sirocco" Fans as the prime air mover of the system, which are mentioned elsewhere in this book.

## Steam Condensation

AS IT requires some 970 Btu. per pound of water to bring it to 212° and effect the normal change into vapor, it can readily be seen that it is highly important to return to the boilers in as hot a condition as possible all steam condensed in either the "A B C" or "Vento" heater stacks used in the factory ventilating system, as thereby there is a large saving in fuel.

The condensation water and return steam from the heater are led to the "Detroit" Steam Trap, located above the boiler water level in the power plant of the factory.



## "A B C" "Detroit" Return Steam Trap



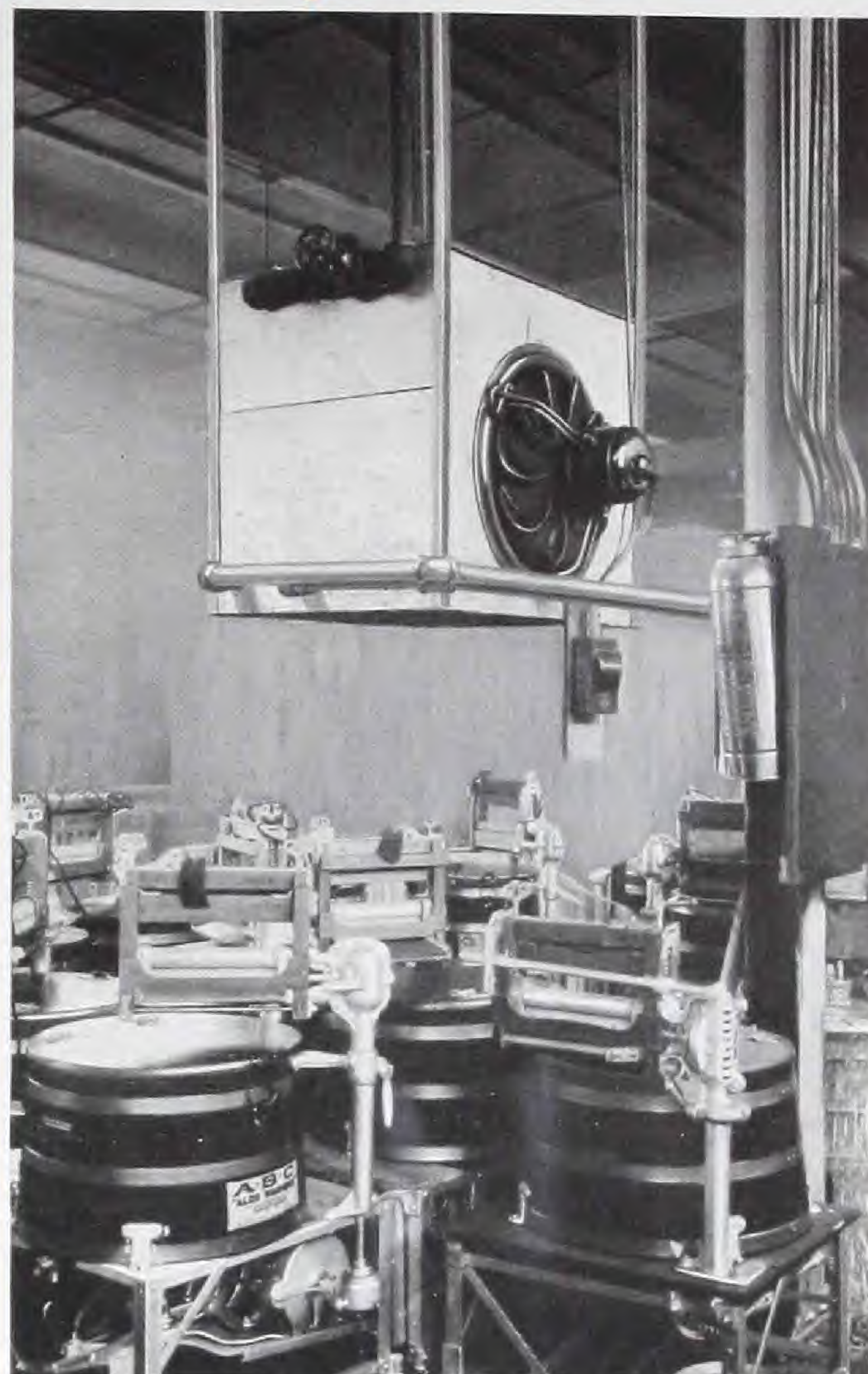
The essential feature of the trap is a counter-weighted closed tank balanced on a pair of trunnions, with the exhaust steam and hot water piped in such a way that the condensation is accumulated in the tank.

### Automatic Gravity Discharge

At a certain level, the water in the trap over-balances the normal horizontal position of the tank, which tilts downwards, and in so doing opens a valve leading to the boiler from the water and allows live steam at boiler pressure to enter above the water.

The static pressures within boiler and tank being now equal, the water flows by gravity into the boiler and the lightened and empty tank immediately falls back to its former position, reopening the exhaust steam and condensation supply, so the tank again fills, when the operation is automatically repeated as long as the trap is in operation.

There are numerous modifications of this installation, according to the factory equipment and needs, and, of course, applicable not merely to the ventilating and heating circuits but to all condenser water used from any source.



Altorfer Brothers Co., Peoria, Ill.  
"A B C" Unit Heater Installation.



One method used for carrying ventilating ducts in factory roof.

"A B C" EQUIPMENT FOR  
FACTORY HEATING AND VENTILATING





Haag Brothers, Peoria, Ill.  
*"A B C" Unit Heater Installations.*



Altorfer Bros. Co., Peoria, Ill.  
*Unit Heater Installations in 200' x 600' building, for winter heating.*



Eastern Car Co., E. Glasgow, N. S., Can.  
*"Fento" Heater Stacks with "Sirocco" drive and ducts Exhaust System.*

**"A B C" EQUIPMENT FOR  
FACTORY HEATING AND VENTILATING**

## Self-Oiling Steam Engines

THE requirements of many "Sirocco" Fan Installations in the systems described often call for steam drive, rather than electric drive.

As the engines are necessarily small and compact, the small steam units of the ordinary commercial type are necessarily wasteful, and demand frequent adjustment and attention, with shutdowns.

A special type of steam engine—which is also sold for other uses—has been developed by the American Blower Company, completely to meet the particular needs of "Sirocco" Systems.

As the "Sirocco" Installations are often located within the confined spaces, compactness of the engine, which is a vertical, single-cylinder unit, has been made a first consideration.

The engine may be obtained separately for any purpose for which small steam units are desirable, and is a perfect source of power for the driving of the efficient "Sirocco" Fan.



**"A B C" Type "A" Single Cylinder and  
Type "E" Double Cylinder  
Vertical Self-Oiling Engines**



## "A B C" Service

AMERICAN Blower Installations have been in many cases used continuously for as long as a whole generation, and are still performing adequately and with satisfaction to the owners.

While the quality of this service is insured by the co-operation and help of the highly-specialized "A B C" technical staff before the installation is designed, the length of service is maintained by extreme care in design, lay-out, material and workmanship of the various units that make up the particular equipment. In this way each installation of "A B C" Products is so protected from the moment of planning any proposed project, that the ultimate owner will have the fullest return on his investment in both length and character of performance.

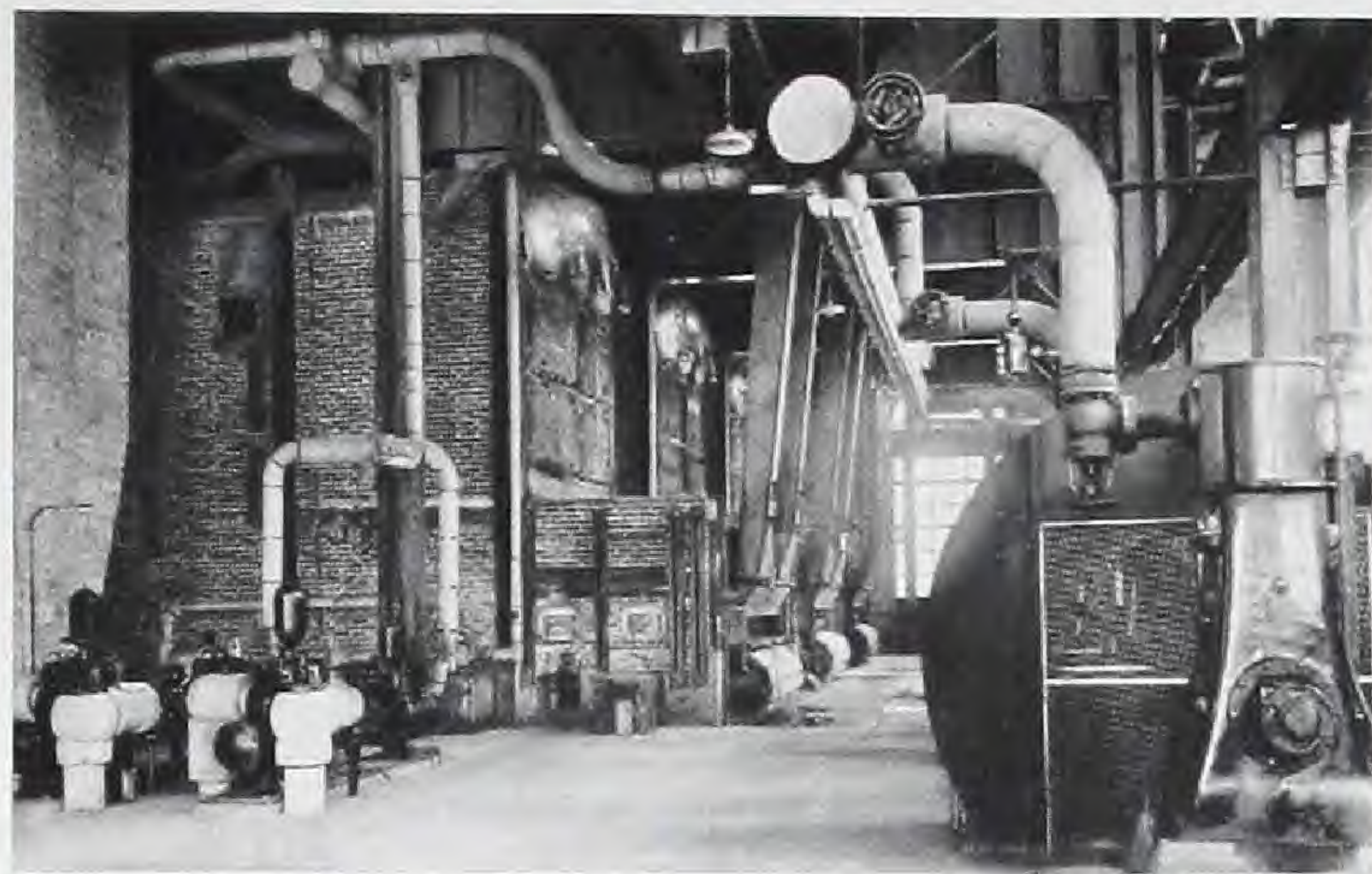
There is no more efficient means of satisfaction than these painstaking methods of developing each "A B C" System for each set of conditions represented by a prospective order.

*In continuous use for over 18 years at the  
Columbia Western Mills, Saginaw, Mich.*



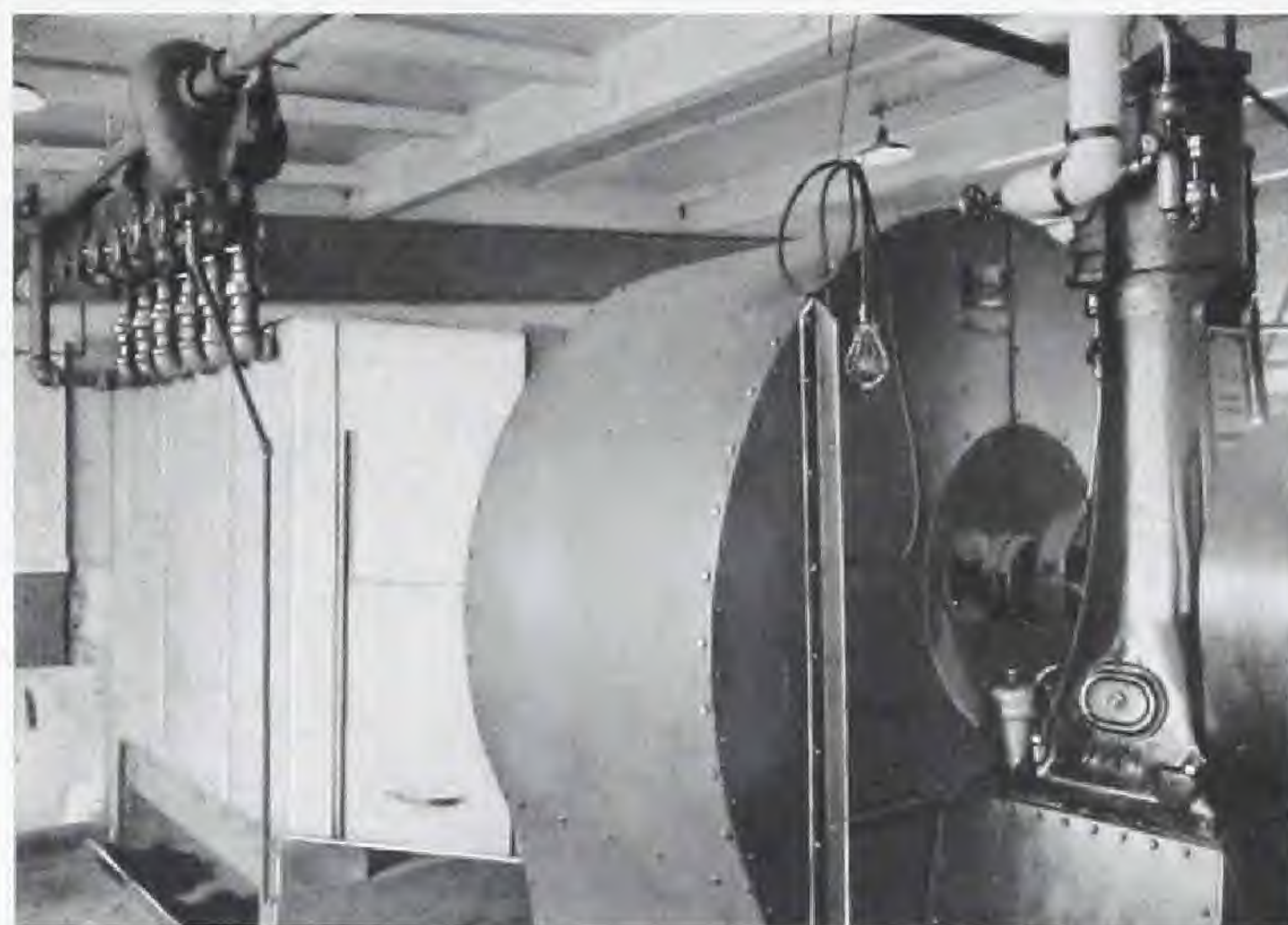
"A B C" Engine  
Fan and Heater

*"Sirocco"*  
TRADE MARK



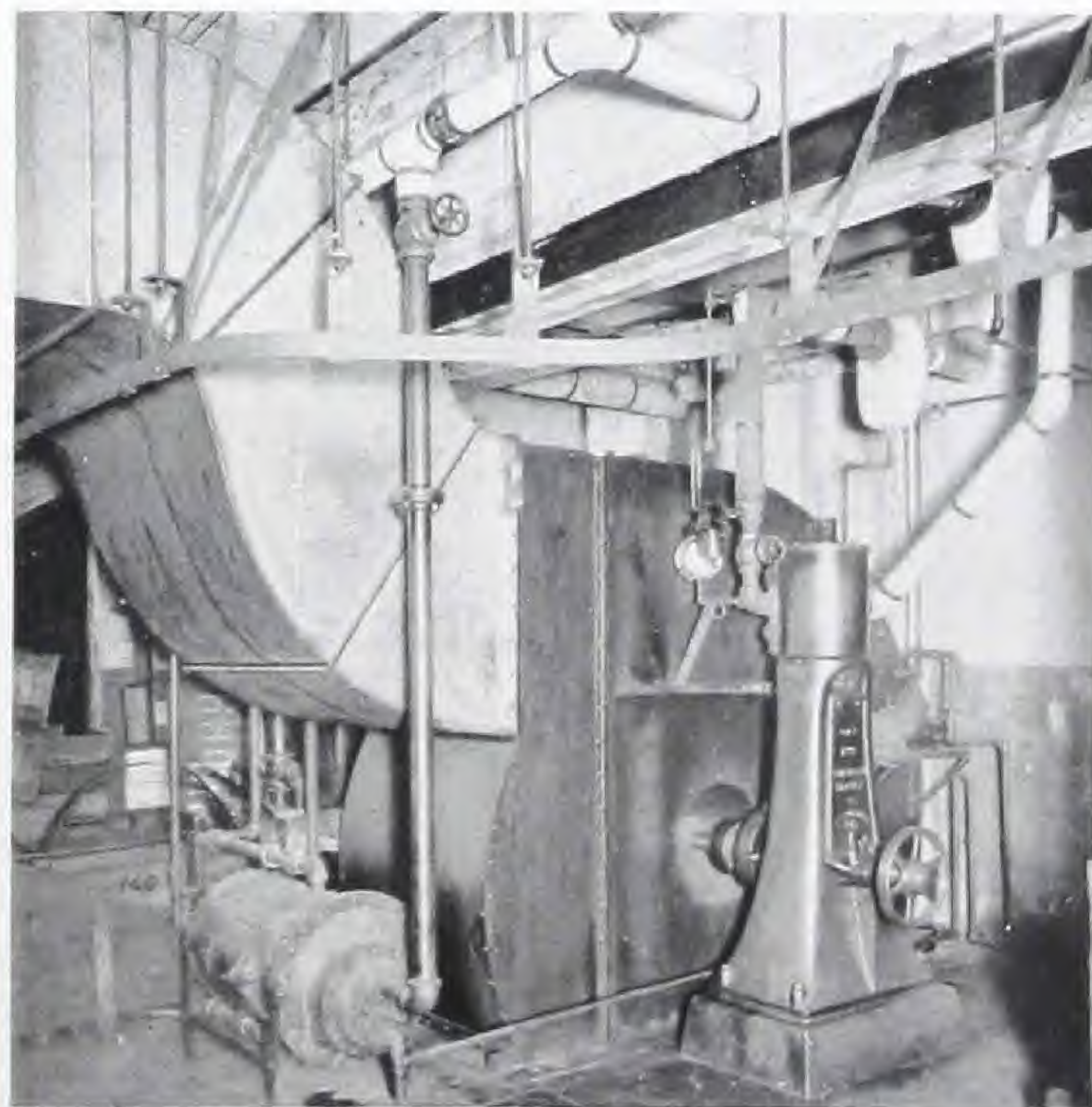
J. H. & C. K. Eagle Mfg. Co., Shamokin, Pa.

*Induced draft in boiler room with direct-connected  
"Sirocco" Fan and "A B C" Engine.*



Industrial Works Co., Bay City, Mich.

*"Sirocco" Fan with "A B C" Vertical Direct-Connected  
Engine drive.*



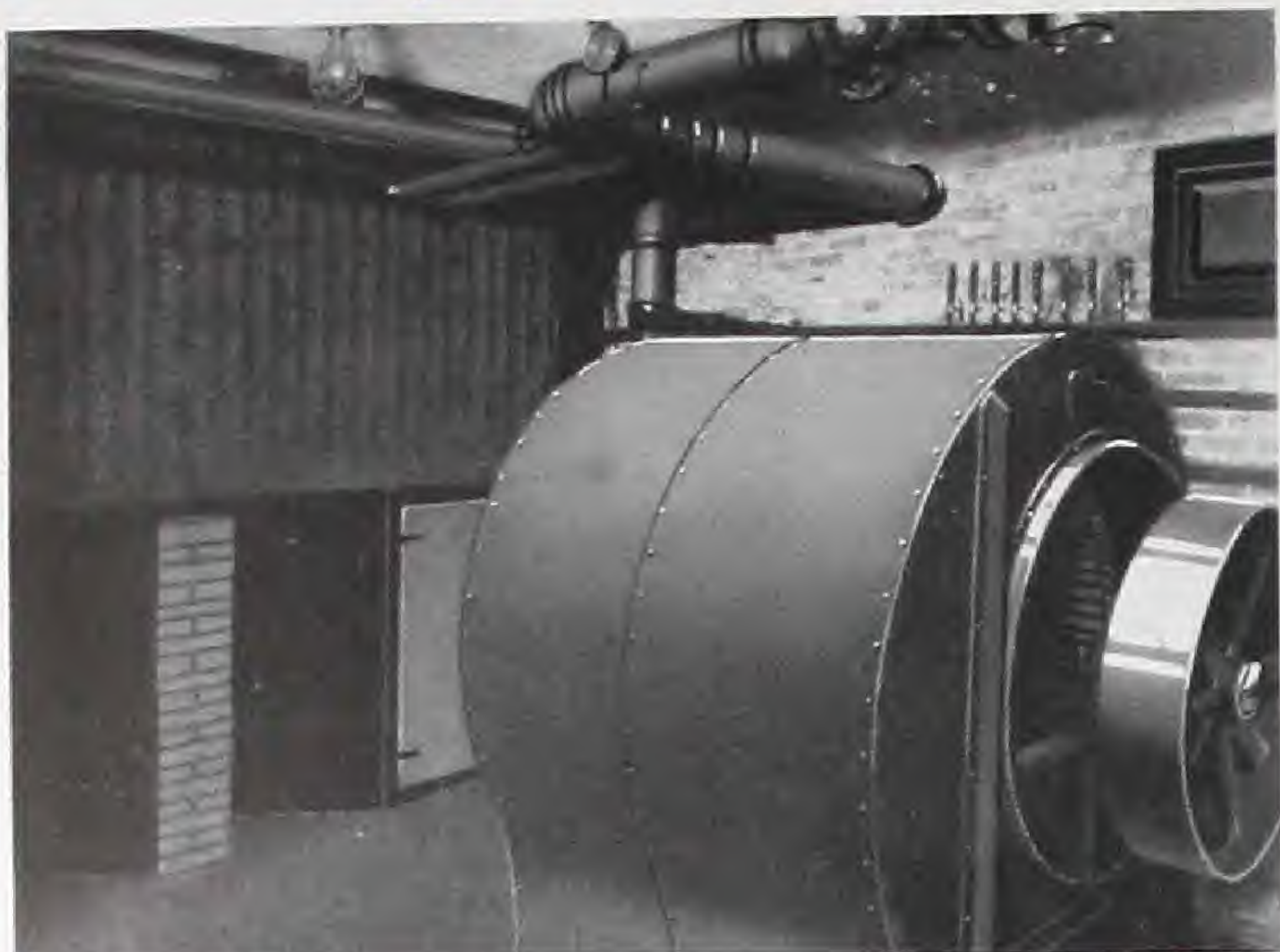
Miller Lock Co., Philadelphia, Pa.

*"A B C" Blower Equipment with Type "A" Engine*

**"A B C" EQUIPMENT FOR  
FACTORY HEATING AND VENTILATING**



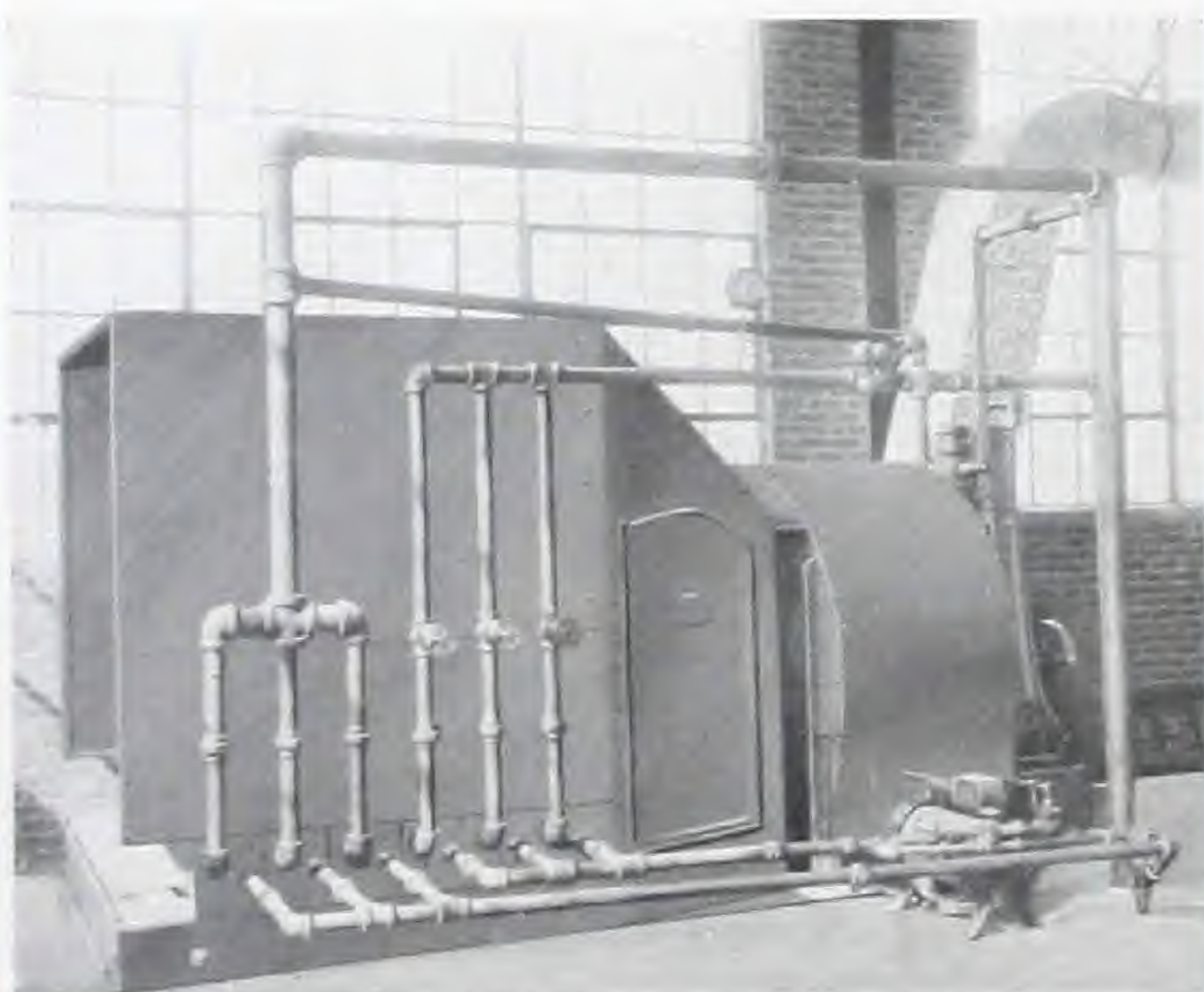
***"Sirocco"***  
TRADE MARK



Deering Plant, Int. Harvester Co., Chicago, Ill.  
*"Sirocco" Fan and "Vento" Heater Stack for factory.*



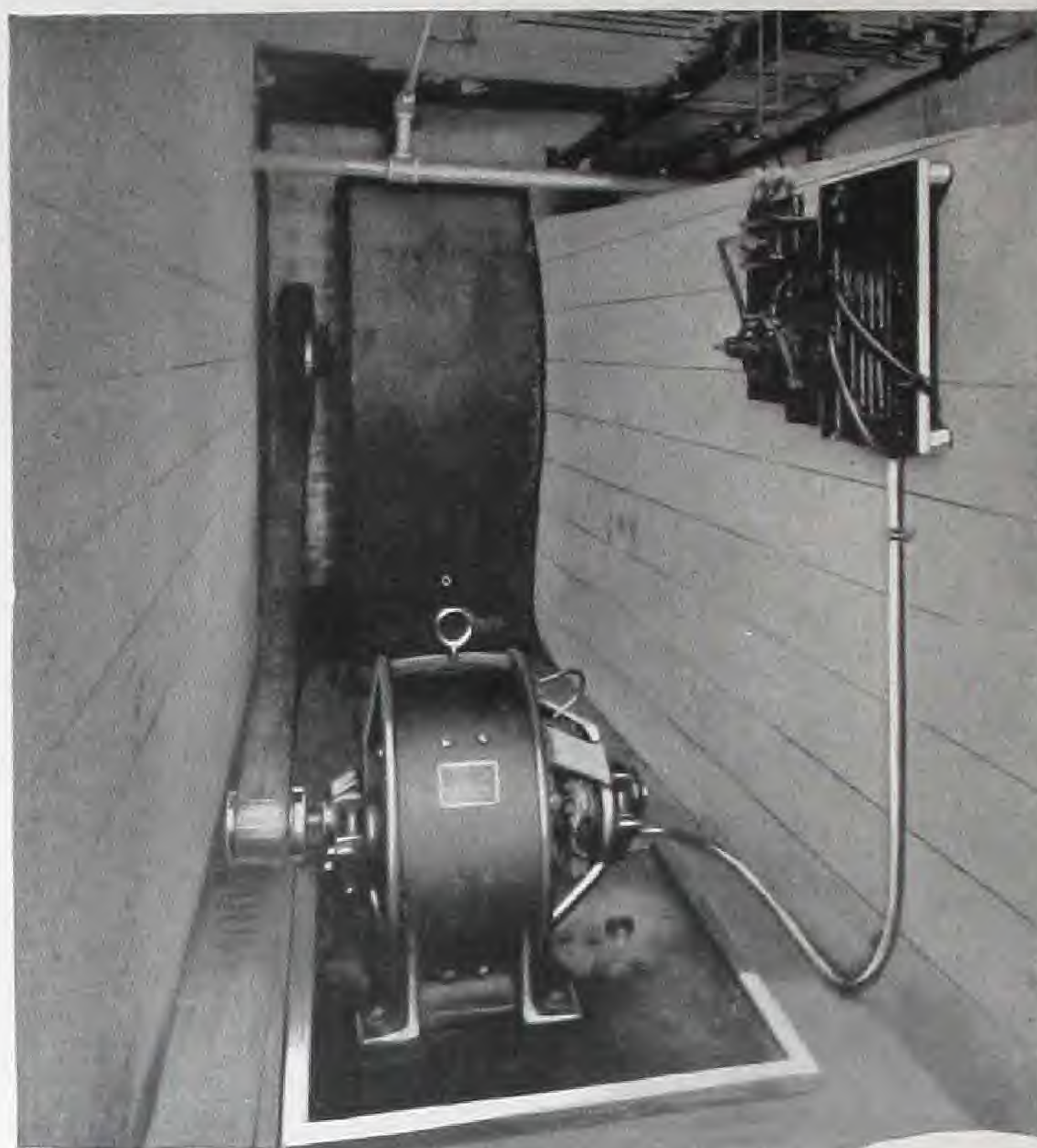
Robert Hassler, Inc., Indianapolis, Ind.  
*Ventilating ducts and "A B C" Vento Heater Stack on roof girders.*



N. F. Nossor & Son, Allentown, Pa.  
*Installation of "Sirocco" Fan, "A B C" Heater and Engine.*

**"A B C" EQUIPMENT FOR  
FACTORY HEATING AND VENTILATING**

*In constant operation for about 17 years in the  
plant of the Manhattan Refrigerating Co.  
New York City*



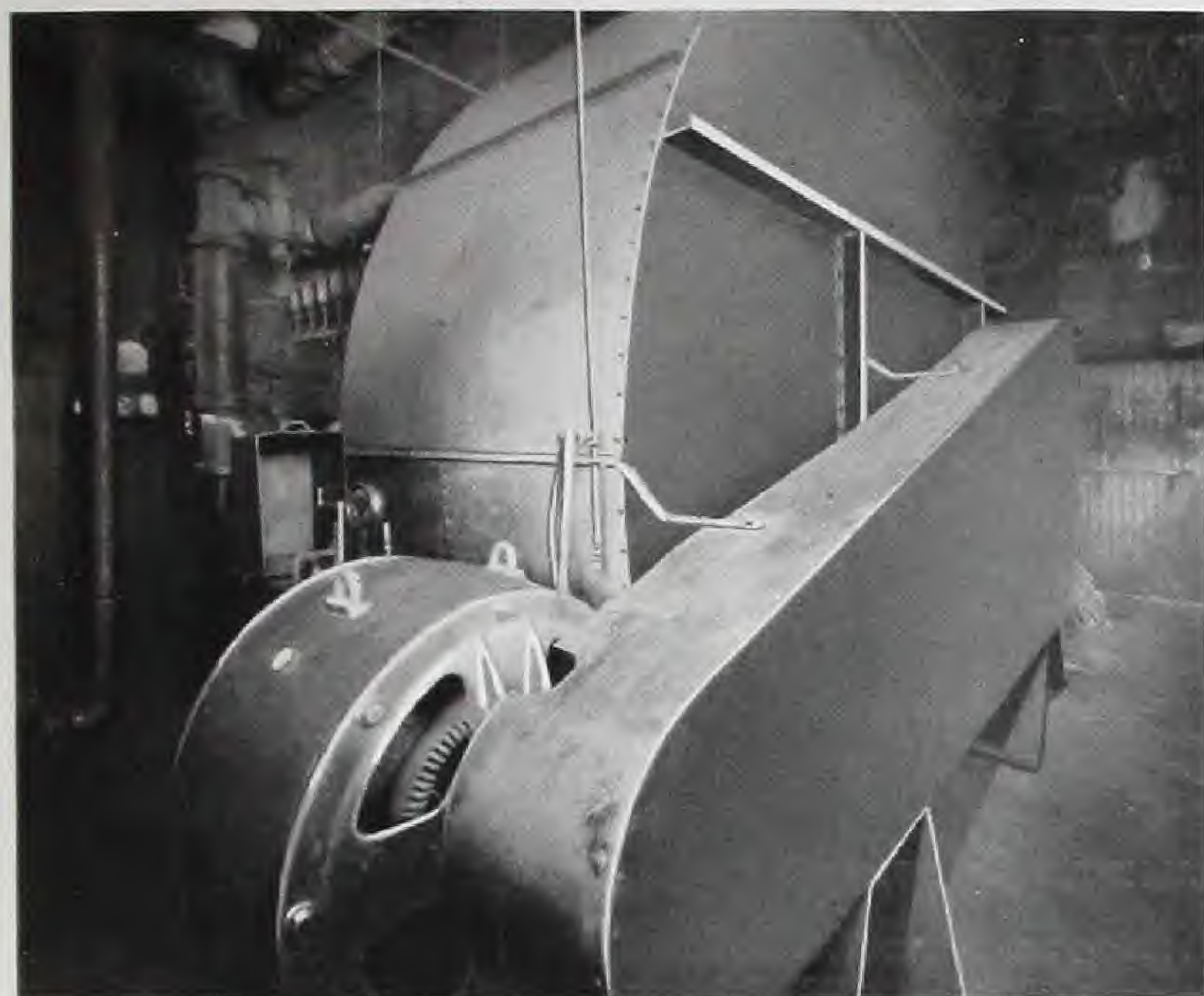
*"A B C" Type "S" Fan*



*One of the Indirect Refrigerating Chambers*



240" "A B C" Type "S" Steel Plate Fan used  
for 13 years in the roundhouse of the C., M.  
and St. P. R. R., So. Minneapolis.

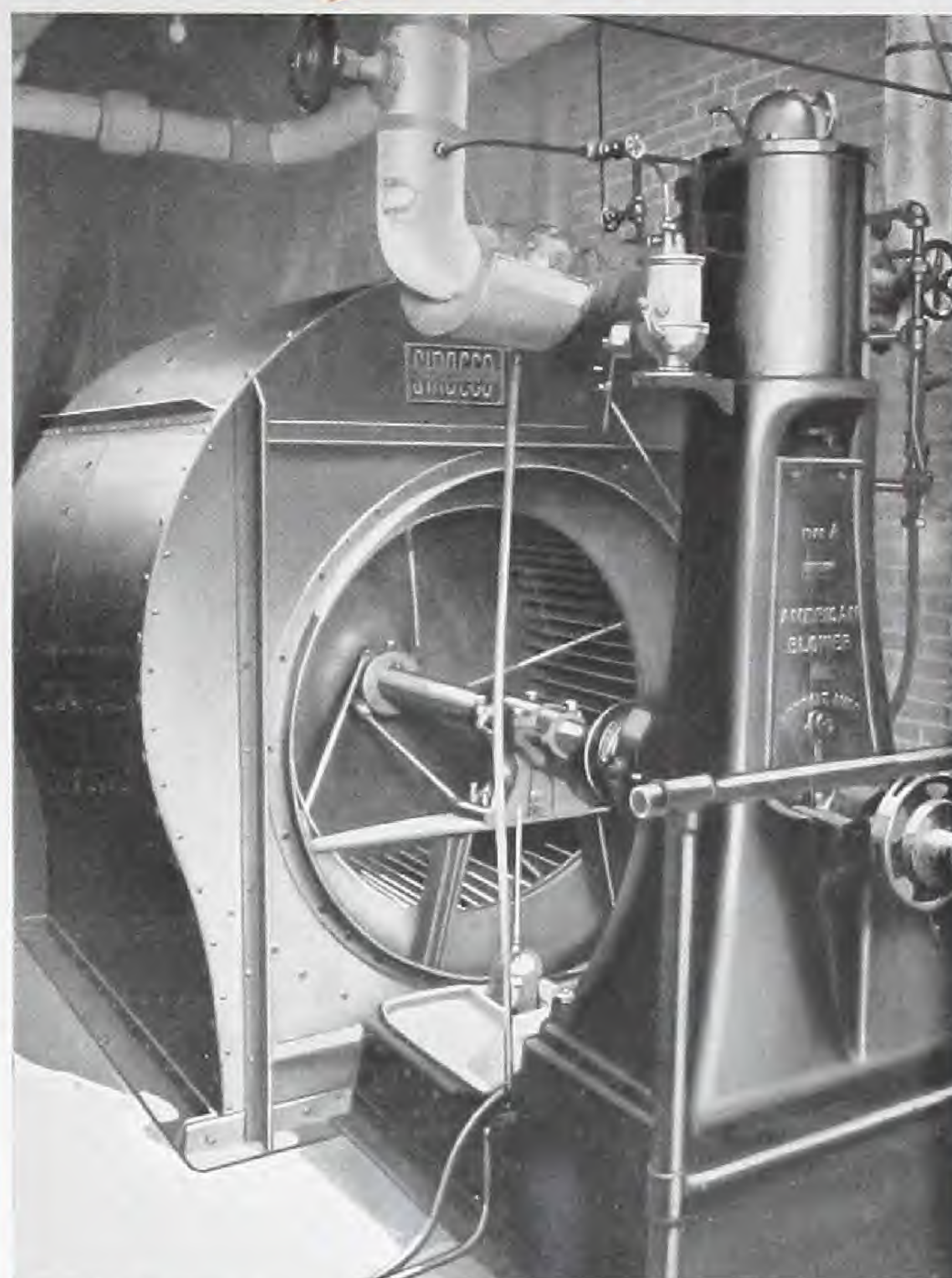


## "A B C" Engineering Assistance

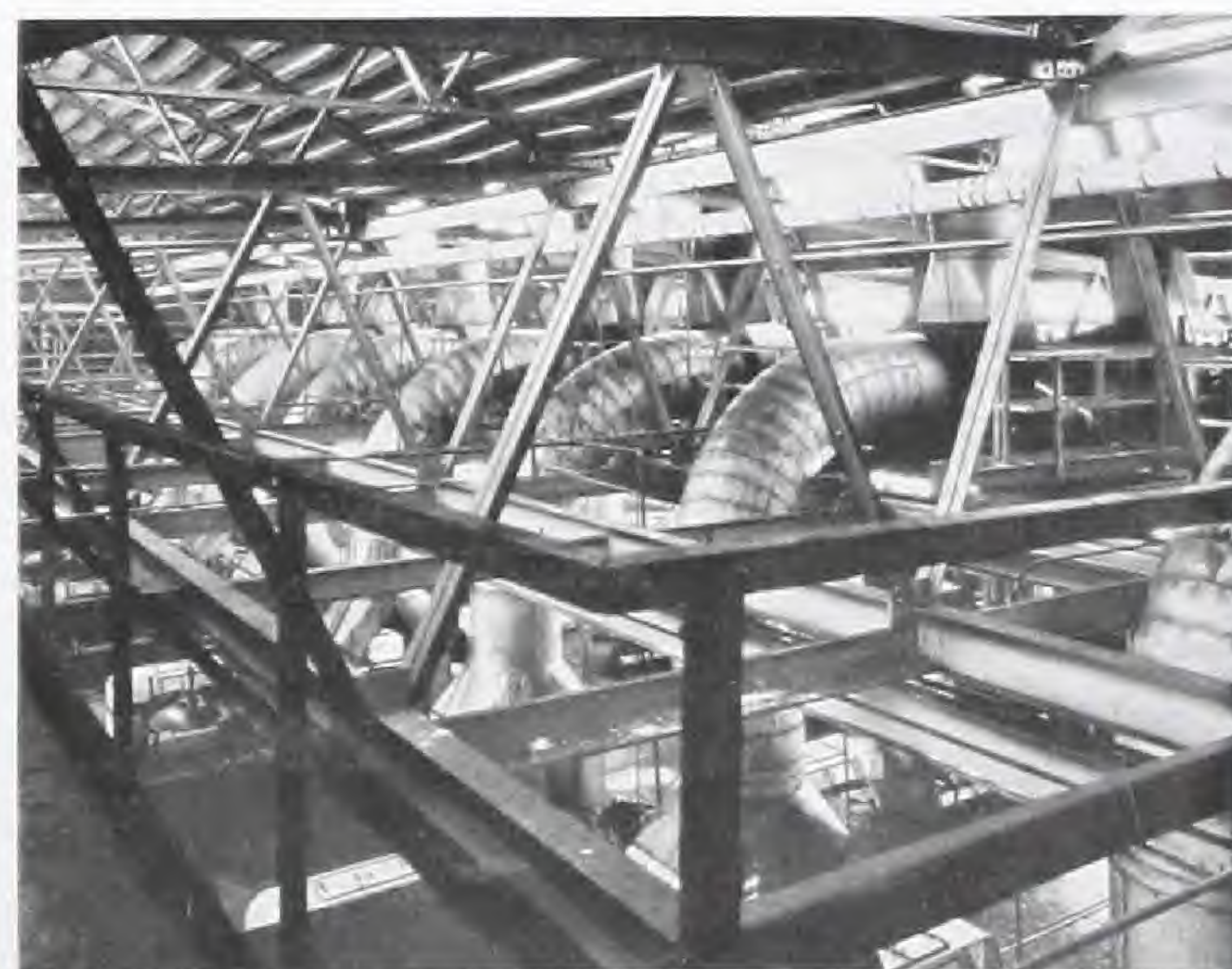
THE American Blower Company engineers are highly experienced in the design and installation problems of all industrial and factory ventilating, heating and air-treatment systems which may be in prospect. These services are highly specialized, and will be gladly placed at the disposition of any corporation or engineer who is interested in factory ventilating problems in which "A B C" Equipment is being considered.

**AMERICAN BLOWER COMPANY**  
DETROIT, MICHIGAN

**"Sirocco"**  
TRADE MARK



Curtis Publishing Co., Philadelphia, Pa.  
"Sirocco" Fan with Type "A" engine drive.



Willys-Morrow Co., Elmira, N. Y.  
"Sirocco" Fan Units on roof truss members.

"A B C" EQUIPMENT FOR  
FACTORY HEATING AND VENTILATING



# Get in touch with one of our Engineers

## AMERICAN BLOWER COMPANY

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WORKS: DETROIT, MICH., AND TROY, N. Y.

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CCA



*"Sirocco"*  
CEMENT BRAND